

New!

OMRON

Motion Network Servo Systems

SYSMAC CS/CJ-series Position Control Units MECHATROLINK-II

CJ1W-NC271/471 **NEW**

CS1W-NC271/471 **NEW**

CJ1W-NCF71

CS1W-NCF71

CJ1W-NCF71-MA **NEW**

Motion Control Units MECHATROLINK-II

CJ1W-MCH71

CS1W-MCH71

AC Servomotors and Servo Drives with Built-in MECHATROLINK-II Communications

OMNUC G Series **NEW**

R88M-G/R88D-GN□-ML2

OMNUC W Series

R88M-W/R88D-WN□-ML2

SMARTSTEP Junior

R7M-Z/R7D-ZN□-ML2

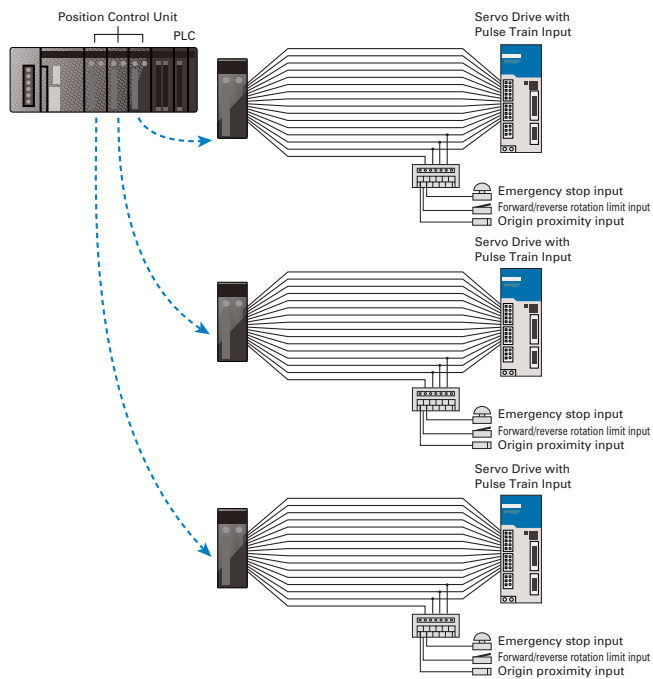
Motion Networks Change the Way Equipment Operates.
Controllers, AC Servomotors, and Servo Drives Supporting MECHATROLINK-II



realizing

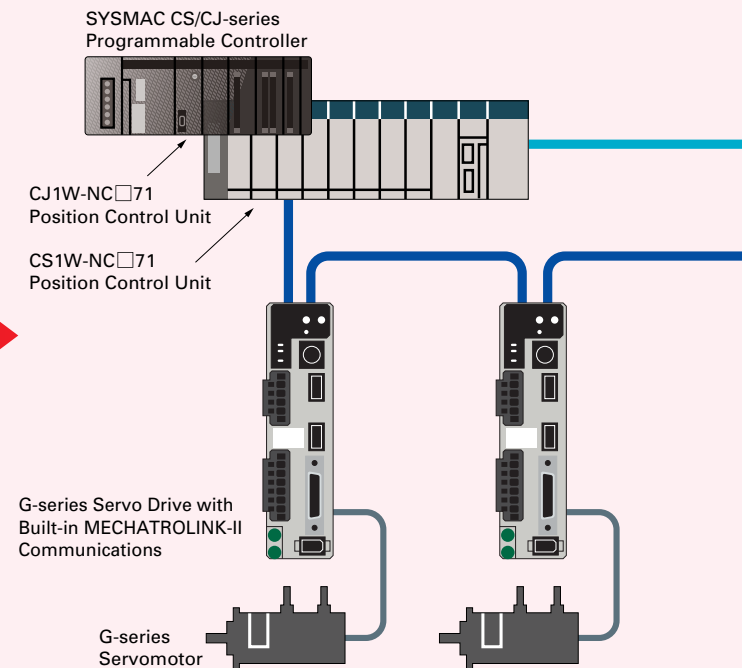
MECHATROLINK-II Compatibility Means Less Time Single-cable Connection Simplifies Wiring and Makes

Before



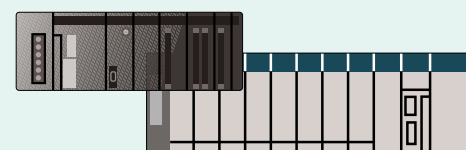
- Routing wires was difficult because of the number of wires involved.
- Expanding or modifying equipment was complicated because the number of axes dictated the number of Units.
- Settings took time because Controllers and Servo Drivers had to be set separately.

After



Less Wiring

Simple

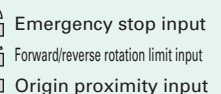


Overall length:
100m
(When repeater is used)

One cable

Simplicity

Eliminates wiring complications!



Single-cable connection offers wiring flexibility

- Having just one cable to connect reduces wiring work and prevents mistakes.
- Connecting limit input signals and origin proximity sensors directly to the Servo Drive saves time.
- Simple setup enables immediate trial operation and fine tuning of equipment.

OMNUC G Series **NEW**

Built-in MECHATROLINK-II Communications



OMNUC W Series

Built-in MECHATROLINK-II Communications



SMARTSTEP Junior

Built-in MECHATROLINK-II Communications

Spent on Wiring! It Easier to Use!

Layout

The System can be laid out as desired between the Controller and Servo Drivers.



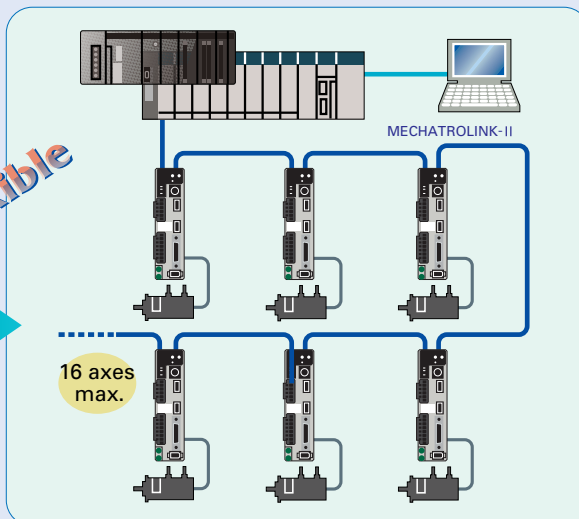
MECHATROLINK-II

Multi-axis Control

Flexible

Simple Expansion

- Control of up to 16 axes (for NCF71 Position Control Units).
- Flexible control, making it possible to start with a small number of axes and add more in the future.



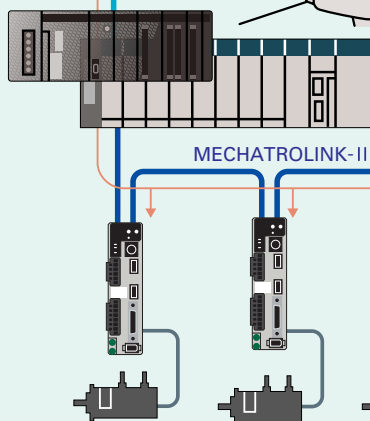
INDEX

Concepts	Front — 1
New Product Information	Front — 3
Motion Network Lineup	Front — 4
Controller Features	Front — 5
Position Control Units	Front — 5
CX-Motion-NCF	Front — 7
CX-Programmer	Front — 8
Motion Control Units	Front — 9
CX-Motion-MCH	Front — 11
Servo System Features	Front — 13
OMNUC G	Front — 13
OMNUC W	Front — 15
SMARTSTEP Junior	Front — 16
CX-Drive	Front — 17
Motor Selection Program	Front — 18
Servomotors, and Servo Drives Selection Guide	Front — 19

Centralized Data Control

Accessible

All parameters can be set from one location



Management

Easy parameter management using a Support Software connected to the PLC.

Less Time Spent on Startup and Maintenance!

- Parameters can be set and managed for multiple Servo Drivers simply by connecting a computer to the Controller, with no need to connect the Support Software to each Servo Motor.

Position Control Unit	A — 1
Motion Control Units	B — 1
OMNUC G-series	C — 1
System Configuration	C — 1
Interpreting Model Numbers	C — 3
Ordering Information	C — 5
Servo Drive-Servomotor Combinations	C — 15
Servomotor and Decelerator Combinations	C — 16
Cable Combinations	C — 17
Servo Drive Specifications	C — 21
Servomotor Specifications	C — 24
Decelerator Specifications	C — 35
Encoder, External Regeneration Resistors, Reactor and Parameter Unit Specifications	C — 39
Connections	C — 41
I/O Circuit Diagrams	C — 46
Components and Functions	C — 47
Parameter	C — 49
Dimensions	C — 51
Related Manuals	C — 74
OMNUC W-series	D — 1
System Configuration	D — 1
Interpreting Model Numbers	D — 3
Ordering Information	D — 5
Servomotors and Decelerators Combinations	D — 11
Cable Combinations	D — 13
AC Servo Drive Specifications	D — 15
AC Servomotor Specifications	D — 17
Decelerator Specifications	D — 25
Specifications for Servomotors with Decelerators	D — 26
Connections	D — 30
Components and Functions	D — 32
Parameter	D — 34
Dimensions	D — 38
Related Manuals	D — 45
SMARTSTEP Junior	E — 1
System Configuration	E — 1
Interpreting Model Numbers	E — 3
Ordering Information	E — 4
Cable Combinations	E — 6
AC Servo Drive Specifications	E — 8
AC Servomotor Specifications	E — 9
Torque and Rotation Speed Characteristics	E — 10
Decelerator Specifications	E — 11
Connections	E — 12
I/O Circuit Diagrams	E — 13
Components and Functions	E — 15
Parameter	E — 17
Dimensions	E — 18
Related Manuals	E — 21

Concepts

New Product Information/
Motion Network Lineup

Controller Features

Servo System Features

CX-Drive

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

New Product Information

New Functionality and High Performance to Support a Wide Variety of Applications

SYSMAC CS/CJ Series Position Control Units MECHATROLINK-II

(for 2 or 4 Axes)

CJ1W-NC271/471

CS1W-NC271/471

Models with 2 or 4 axes for absolute encoders and easy programming using familiar ladder diagrams.



Page
A-1

AC Servomotors

OMNUC G Series with Built-in MECHATROLINK-II

R88M-G/R88D-GN □ -ML2

- The OMNUC G Series supports MECHATROLINK-II communications.
- Perform control data communications between driver controllers using only one cable.

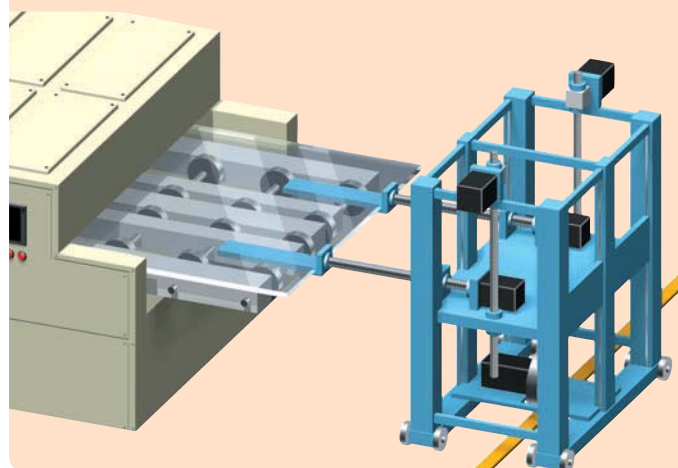


Page
C-1

SYSMAC CJ Series Position Control Units MECHATROLINK-II

(Position Control Unit for 16 axes with 2-axis linear interpolation)

CJ1W-NCF71-MA



- Linear interpolation is enhanced for use in conveyor control with 2-axis bilateral movement for large panels, such as LCD and plasma.

■ Interaxial Deviation Monitor for Linear Interpolation

- When linear interpolation is used, it is possible to monitor the current feedback position of up to two selected axes and to decelerate the axes to a stop if the deviation between the axes exceeds the setting.

■ Interaxial Stop Mode Setting for Linear Interpolation

- Previously, if a Servo error occurred on one axis, the other axis would decelerate to a stop, but now it is possible for the other axis to use the same stopping mode as the axis with the error by selecting emergency stop or Servo unlock.

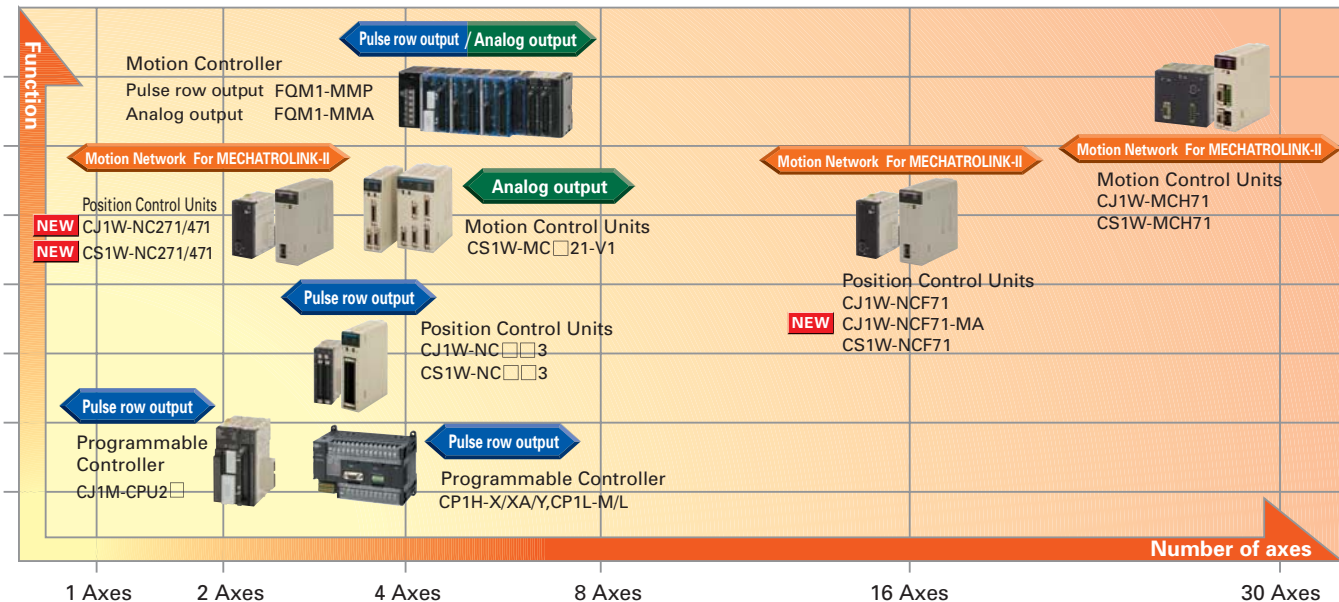
Note : The functionality described above is only for the CJ1 Series CJ1W-NCF71-MA.

Page
A-1

Motion Network Lineup

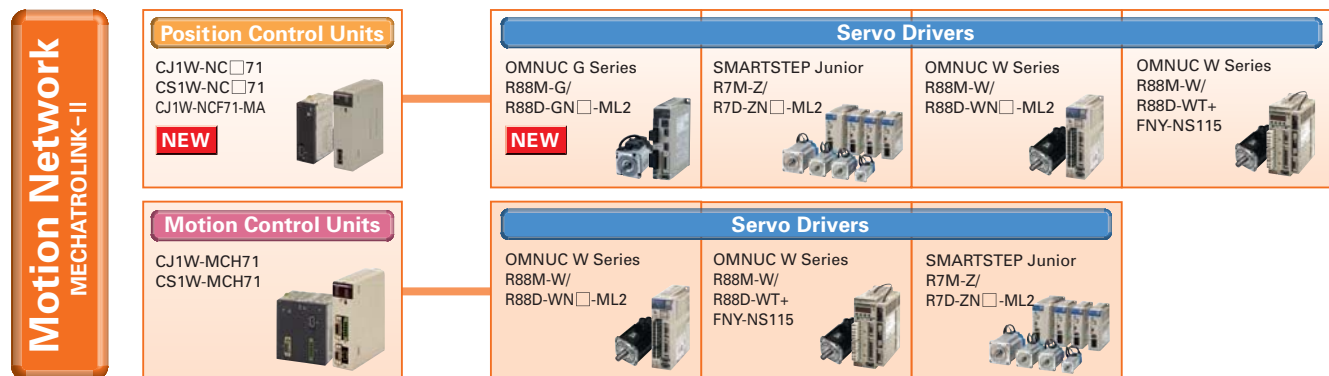
Controller Lineup

The product lineup offers a wide selection of Controllers to match applications ranging from position control to synchronization control.





Motion Network Connecting the Controller and Servos

You can connect to the Servomotor using just one cable, whether the Servomotor is in the advanced, high-performance OMNUC G Series or in the economical SMARTSTEP Series.



Description of Functions

Description of Functions			Controller functions									Support Software			Easy operation	
			No. of axes	Interfaces	Absolute encoder	External pulse input	Position control	Linear interpolation	Arc interpolation	Speed control	Torque control	Synchronous control	Positioning programs	Programming software	Configuration software	Easy wiring
Motion Network MECHATROLINK-II	Motion Control Units	CJ1W-MCH71 CS1W-MCH71	1~30	ML2	ABS	External pulse	Position control	Linear interpolation	Arc interpolation	Speed control	Torque control	Synchronous control	Motion language	CX Motion MCH	CX Motion MCH	
	Position Control Units	CJ1W-NC□71 CS1W-NC□71	1~16	ML2	ABS		Position control	Linear interpolation		Speed control	Torque control		Ladder direct	CX Programmer	CX Motion MCH	

ML2 MECHATROLINK-II Motion Network with high-speed servo communications.

External pulse Feedback pulse from manual pulse input or encoder.


Speed control Operation of multiple other axes synchronized with an encoder mounted to the main axis. (The encoder is a sensor that detects the displacement of the main axis.)

Motion language Special BASIC-like programming language for the MCH designed for motor control.

Ladder direct Control performed by setting position and speed data directly from a ladder diagram.

Easily Achieve a Wide Range of Control. A Position Control Unit for Up to 2/4/16 Axes of

From machine design to future expansion, all stages are simple and easy.



SYSMAC CS/CJ Series Position Control Units MECHATROLINK-II

CS1W-NCF71	CJ1W-NCF71
NEW CS1W-NC471	NEW CJ1W-NC471
NEW CS1W-NC271	NEW CJ1W-NC271

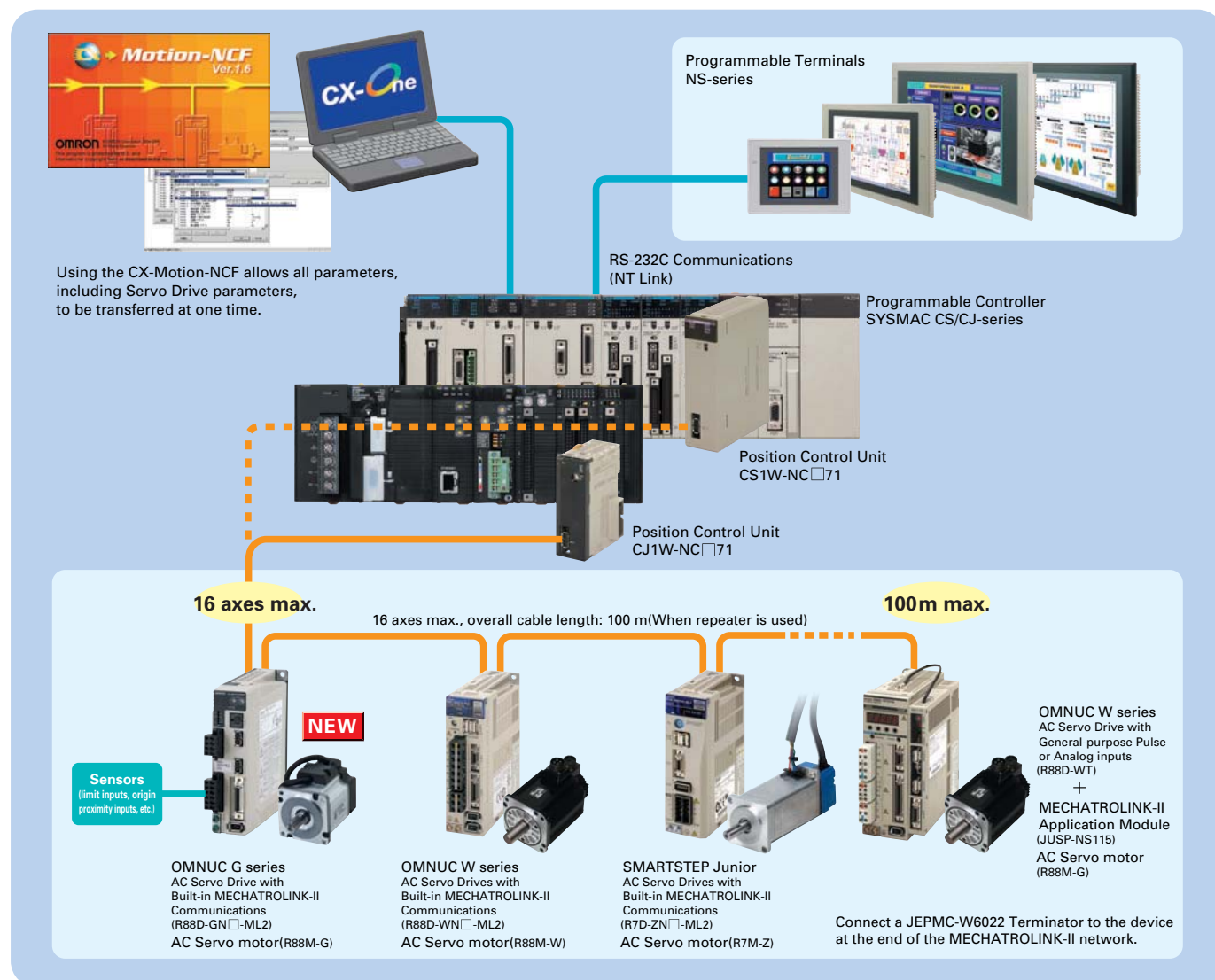
Positioning programs (ladder diagrams)

Position control	Linear interpolation	Ladder diagrams (direct operation)
Speed control	Absolute encoders supported (G/W Series)	Present value preset
Torque control	2/4/16 Axes	Baud rate of 10 Mbps

Supports
OMNUC G Series **NEW**
OMNUC W Series
SMARTSTEP Junior

NEW CJ1W-NCF71-MA

System Configuration Example



Servo Control.

Origin Search (Unit Version 2.0 or Later)

Support for a Full Selection of Operating Modes

● More origin search operating modes!

Eleven origin search operation patterns (such as for devices with a small range of movement for workpieces, a reduced number of sensors, etc.) are provided to support different systems.

Absolute Encoder Origin Search Enabled!

● Easily handle "no origin" problems (R88D-WN□-ML2 / R88D-GN□-ML2 only)

The zero point position offset for the absolute encoder can now be set automatically, with no need to cycle the power to the Servo Driver and execute the device setup.

● Origin Search Operating Modes(11 Modes Total)

Origin detection method	Origin search operation			
	Reversal mode 1	Reversal mode 2	Single direction mode	Reversal mode 3
With origin proximity input signal reversal	●*	●	●	○
Without origin proximity input signal reversal	○*	○	○	○
Without using origin proximity input signal	○*	○	○	

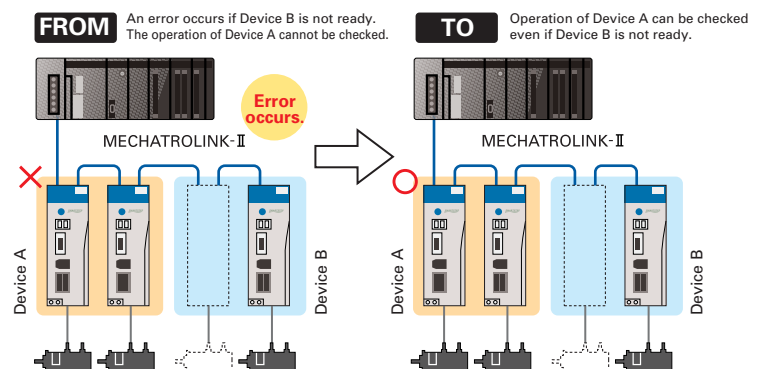
● Combinations supported by unit version 1.3 or earlier

○ Combinations supported by unit version 2.0 or later

*: Origin search operation patterns supported by absolute encoders.

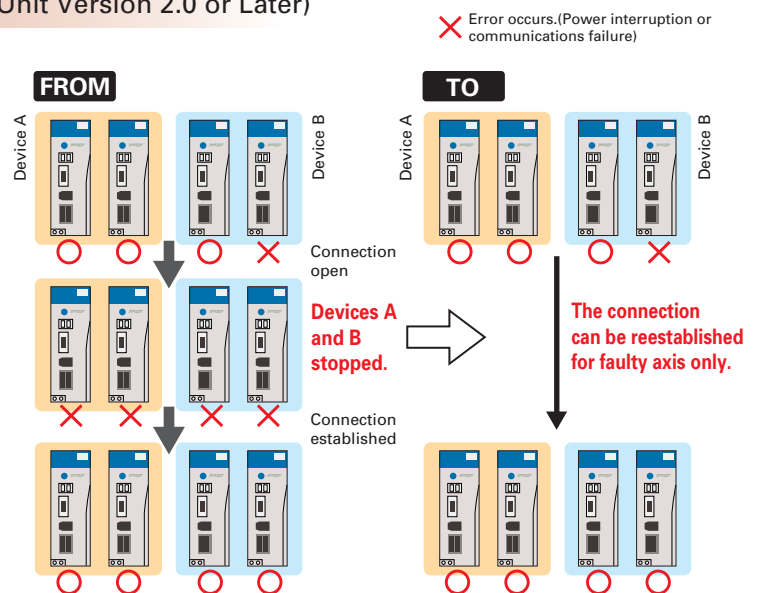
Connected Axis Designation (Unit Version 2.0 or Later)

Operations can be checked without affecting programming even for device design and startup when not all axes are connected.



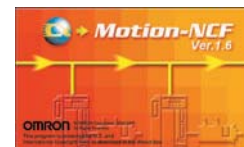
Re-establish Connections (Unit Version 2.0 or Later)

Error recovery without stopping all axes improves productivity throughout the entire system!



Easy Parameter Management while Connected to the PLC!

CX-Motion-NCF Support Software Version Ver.1.8



CJ1W/CS1W-NC271/NC471 are supported (Ver.1.8)

CJ2 CPU Unit are supported (Ver.1.6)

OMNUC G Series are supported (Ver.1.6)

Easily set and monitor parameters of the Unit and the connected Servo Drives. Also, check Servo Drive operation and set up absolute encoders. A variety of functions provides total support for the system.

Functions

Make Settings without Changing the Connection!

1 Editing parameters

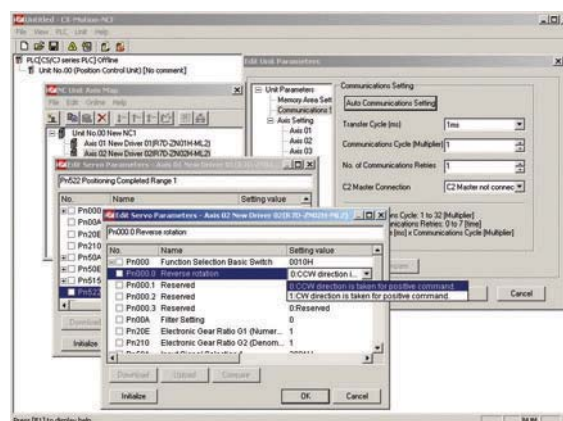
Add Position Control Units and Servo Drives to projects. The parameters can easily be edited.

2 Transferring and verifying parameters

Parameters for Position Control Units and connected Servo Drives can be transferred. The parameters can be verified, and parameters that are different can be checked.

3 Setup of absolute value encoder

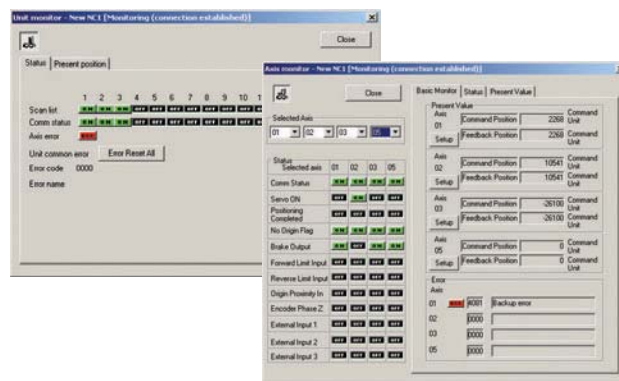
The absolute value encoder of the servo driver connected with the positional control unit can be initialized.



Check Wiring without Changing the Connection!

4 Monitoring

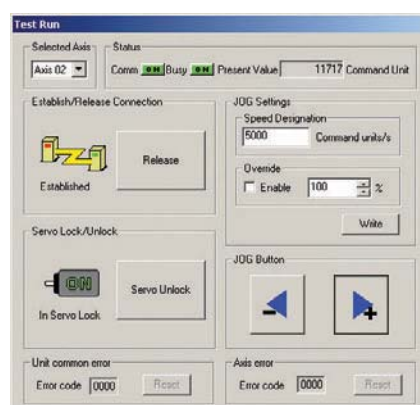
The present status of Position Control Units and connected Servo Drives can be monitored. Up to four Servo Driver axes can be monitored at one time.



Check Operation without Changing the Connection!

5 Trial operation

Servo locks, jogging, and error resetting can be executed from the Support Software. Error codes and the ON/OFF status of I/O for each axis are displayed, and present values and busy status can be monitored.



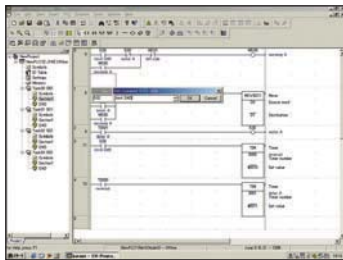
The programming with efficiently high possibility to be able to design and to describe is achieved.

CX-Programmer Programming Software Ver. 8.0



Programming

Simple programming with ladder diagrams just as with previous Pulse-type Position Control Units.



Easy programming with the CX-Programmer.



■ CJ/CS-NC□71 Function Blocks (FB)

- A wide variety of function blocks are available.
- Using function blocks helps reduce programming work.

Examples

Origin search, read parameter, ABSOLUTE/RELATIVE MOVEMENT command, speed control, torque control, linear interpolation, and interrupt feeding

Data Tracing

Time Require for Debugging and Maintenance Has Been Reduced with the Comprehensive Data Trace Function

Functionality and operability has been significantly upgraded compared to the previous data trace function. The new data trace function provides comprehensive debugging, such as I/O comment display of sampled addresses, specification using symbols, checking the measurement time between two selected points, and layering waveforms. Furthermore, data sampled from the CPU Unit's trace memory can be saved to a file on the computer at a specified frequency. This can be used as for long-term logging of data.

Sampled values from a specific word will be displayed.

Sampled value from a specific input bit will be displayed.

The traced waveforms can be displayed as layers.



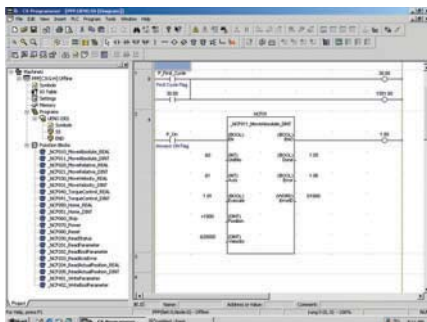
OMRON Standard Libraries

OMRON Standard Libraries are software applications that customers can load into their system and use without modification. The OMRON FB Library and Smart Active Parts (SAPs) Library are available now.

These libraries simplify the software developed for interface components between Programmable Controllers (PLCs) or Programmable Terminals and various other control devices. They also improve the quality of the software by using standardized software components.

OMRON FB Library

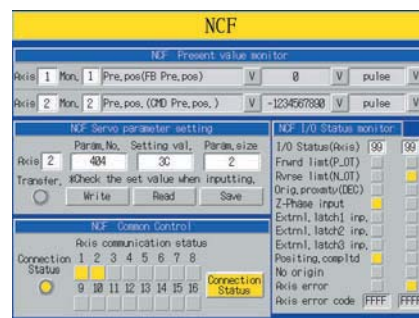
The OMRON FB Library contains functional components for Programmable Controllers (PLCs). These components can be used by customers to produce finished programs that interface with various control devices in much less time. Since the components are standardized, they also improve the quality of the finished programs.



Frequently used ladder programming is provided in each function block. Several function blocks form a library that facilitates program and program asset development.

Smart Active Parts (SAPs) Library

The Smart Active Parts (SAPs) Library, formerly known as the Device Library, consists of screens with functions for Programmable Terminals. SAPs can be used on screens developed by customers to produce finished screens that interface with various control devices in much less time. Since the components are standardized, they also improve screen quality.




The SAPs include various operating screens for Position Control Units. Simply paste SAPs to simplify design work and eliminate unnecessary user programming.

The OMRON FB Library and Smart Active Parts Library can be used with CJ-series Programmable Controller CPU Units version 3.0 or later and NS-series Programmable Terminals version 6 or later, respectively.

A Single Unit Providing the Position, Speed, Torque, Servomotor Control. A Motion Control Unit that Can

Control modes are now provided for position, synchronization, speed, and torque control, enabling multi-axis control with less wiring for a wide variety of applications.



SYSMAC CS/CJ Series

Motion Control Units

MECHATROLINK-II

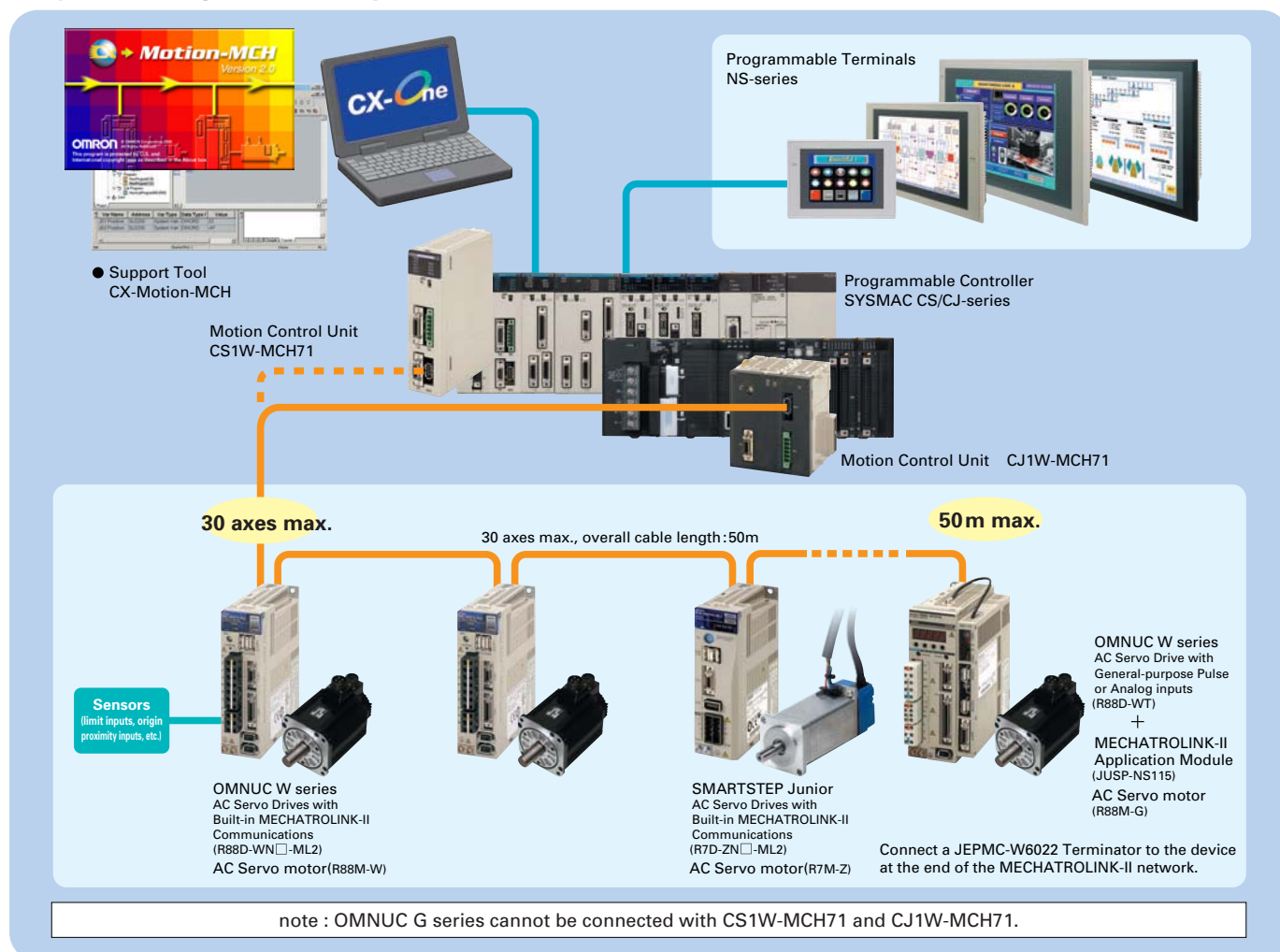
CS1W-MCH71 CJ1W-MCH71

Supports
OMNUC W Series
SMARTSTEP Junior

Positioning programs (special motion control language)

Position control	Linear and circular interpolation	Baud rate of 10 Mbps
Speed control	Absolute encoders supported <small>(W Series).</small>	Present value preset
Torque control	MPG/sync encoder	30 axes <small>(When a virtual axis is included, they are 32 axes.)</small>
Synchronous control <small>(Electronic gear, electronic shaft, electronic cam, electronic link, following)</small>		

System Configuration Example



and Synchronized Control Required for Control Up to 30 Servo Axes.

Features



Easy System Configuration

- Multi-axis control is made easy by freely combining control axes. Up to 32 axes can be used, including 30 physical axes and two virtual axes, and each axis can be set individually. A wide variety of motion control operations are supported, from independent axis control to interpolation and synchronized operation.
- High-speed MECHATROLINK-II (see note) Servo communications are used between the Servo Driver and Distribution Modules, enabling multi-axis control with less wiring. The limit switches and origin sensors required for servo control are input to the Servo Driver, further enhancing distributed control in the multi-axis system.

Note: MECHATROLINK-II is a registered trademark of the MECHATROLINK Members Association.



Easy Information Processing

- By using high-speed servo communications, motion programs, system parameters, system data, and servo driver parameters can be set and read from Support Software running on a personal computer.
- Controller constants and variables, such as system constants, global variables, local variables, can all be read.
- Equipment control status and servo system operating conditions can be monitored.
- Programs and data can be backed up on CPU Unit Memory Cards.



Easy Motion Control

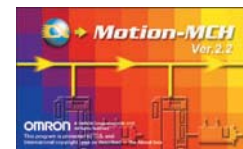
- Position control, synchronized control (electronic gear, electronic cam, follow-up), speed control, and torque control are all supported, enabling a wide range of applications.
- The servo communications cycle can be as short as 1 ms. Scheduled processing for Motion Controllers, Servo Drivers, and Distribution Modules enable consistent high-precision control.
- Eight motion tasks can be used to execute motion programs simultaneously. Branched execution is possible within programs, so both independent control and control involving multiple axes, such as interpolation and synchronization, can be achieved in one programming scheme.
- Global variables enable easily sharing data between tasks. Also, system variables can be used to monitor and use servo status within programs.

Function Upgrades from Unit Version 3.0 to 3.1

- **Restarting after Restoration**
After data has been restored from the CPU Unit's flash memory, the Unit is restarted using a bit between A50100 and A50115 in the Auxiliary Area of the CPU Unit.
- **Expanded Bank Switching for Interpolation Acceleration/Deceleration Times**
The acceleration time and deceleration time used for interpolation operations can be set separately.
- **Internal Overrides**
The feed rate when the following commands are executed can be changed from a motion program.
- **Connecting to SMART STEP Junior Servo Drives**

CX-Motion-MCH Support Software Version 2.2

Creating and transferring CS1W/CJ1W-MCH71 data is easy with the CX-Motion-MCH. New motion program debugging, trial operation (jogging, origin search, etc.) and data trace functions have been added.



CJ2 PLCs are supported (Ver.2.2)

Functions added for Version 2.1 of the CX-Motion-MCH

Note: These functions can be used with Motion Control Units with unit version 3.1 or later.

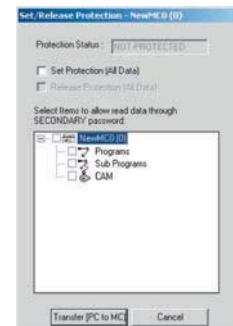
■ **Connecting SMARTSTEP Junior Servo Drives**
SMARTSTEP Junior Servo Drivers can now be connected.

■ **Backing Up and Restoring All Data**
All data can now be backed up and restored, including origin offsets for absolute encoders.

■ **Read Protection for Programs and Cam Data**
can use read protection to restrict access to program and cam data.

● Setting and Releasing Protection

Select Set Protection or Release Protection, and the data items that can be read through the secondary password, and then click the Transfer [PC to MC] Button.



Functions

Programming

1 Parameter Editing

Tasks and axes can be added to projects, and the parameters can be easily edited.

2 Program Editing and Syntax Checking

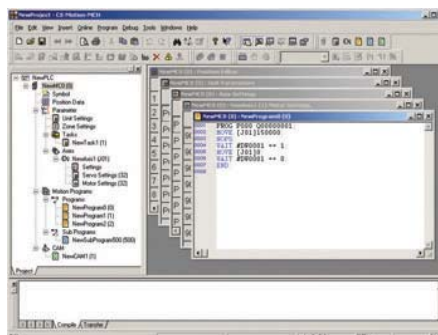
Motion programs can be created and edited. Instructions and comments are color coded for easy understanding. Program syntax is checked offline when compiling, and lines requiring corrections are displayed along with the corrections.

3 Transferring and Verifying Parameters and Programs

MC Unit parameters and programs, and parameters for Servo Drivers connected to MC Units, can be transferred. Parameters and programs are compared between the Unit and Support Software, and any differences are displayed.

4 Monitoring Variables

Variables in MC Units can be monitored. Present positions and error codes are displayed.



Trial Operation and Motion Program Debugging

5 Trial Operation

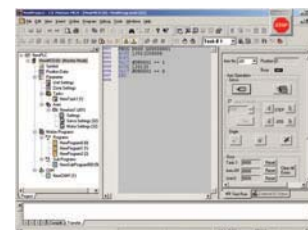
Servo lock, jogging, stepping, origin search, origin return, present position preset, error reset, absolute origin setting, and teaching can be executed using the Support Software. Error codes and I/O ON/OFF status for each axis are displayed. This makes it easy to start up and adjust equipment.

6 Motion Program Debugging

Motion programs can be run using Support Software Program debugging and corrections are made easy by stopping program execution by setting a breakpoint and then continuing from that point.

MC Unit trial operation and motion program debugging can be executed by switching the Support Software to monitor mode.

Note: Only MC Units with unit version 3.0 can be used for trial operation and motion program debugging.



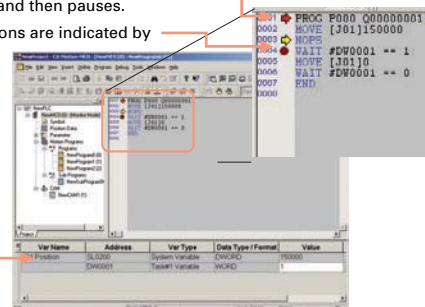
● Motion Program Debugging

The program to be executed is displayed, with breakpoints set at lines where the program is to be paused.

When the program is executed, it runs until the line before the breakpoint and then pauses.

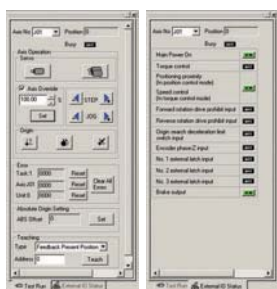
Single or multiple instructions are indicated by arrows for execution lines.

Present positions of axes that are used and execution line variables are displayed in the Watch Window. The values of variables can be changed.



● Trial Operation

Servo lock, jogging, stepping, origin search, origin return, present position preset, absolute origin setting, and teaching can be executed for each axis. Error codes are displayed, and error reset is executed when an error occurs. I/O ON/OFF status for each axis can be checked by switching tabs.



Data Tracing

7 Data Tracing

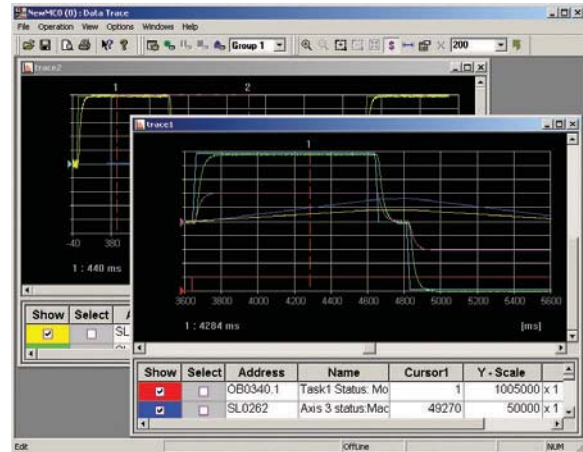
The values of all MC Unit variables can be traced. The results are displayed on a graph, so they can be used for checking operation and making adjustments.

The values of MC Unit variables can be traced.

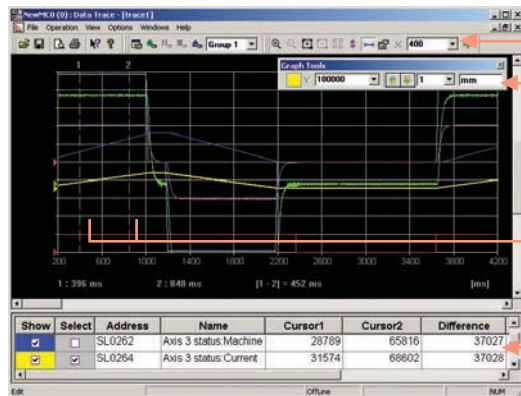
Note: Data trace can be used since the MC unit version 3.0.

● Data Tracing Specifications

Item	Description
Trigger	Trigger condition 1, an AND of trigger condition 1 and trigger condition 2, or manual trigger
Trigger condition	BOOL: OFF to ON, ON to OFF, ON, or OFF WORD/DWORD: =, ≠, <, >, ≤, ≥
Traced items	System variables, position data, global variables, input variables, output variables, and task variables. Select BOOL, WORD, or DWORD.
Number of traced items	32 (16 x 2 groups)
Number of samples	32,768 max. (one traced item) 8,192 (four traced objects)
Sampling interval	Each Unit cycle
Delay	-(Number of samples) to +(Number of samples)



The trace settings are made in dialog boxes.

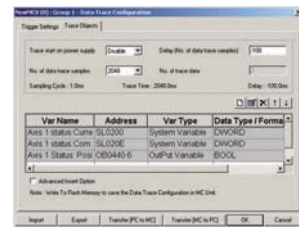
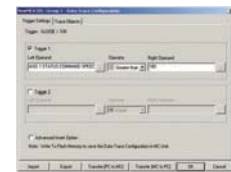


Trace results are displayed on a graph.

The graph can be expanded or contracted.

For each data item, the scale can be changed, the display position can be moved up or down, or the item can be displayed or hidden.

By using the cursors, the cursor position values and the difference between two points is displayed. The graph can be printed as it appears on the screen.



Note : ⑤ ⑥ ⑦ can be used since the MC unit version 3.0.

WSO2-MOPC2 Cam Data Creation Software

■ Cam Data Capacity

You can create up to 16,000 sets of cam data, with each set consisting of the phase and deviation.

■ Control Graphs

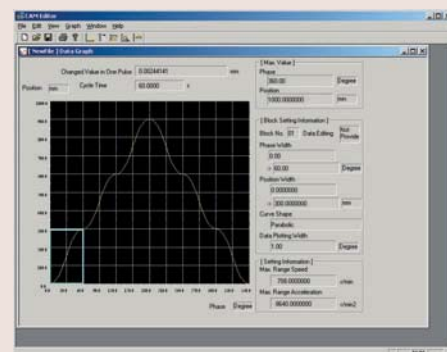
You can simultaneously display and confirm speeds, accelerations, and movements for the cam curve data you create.

■ Twenty-four Types of Characteristic Curve Data

Cam curves can be easily created for up to 24 different types of characteristic curve data.

■ Comparisons

You can display and compare more than one cam curve.



Complete Reinforcement of Functions and Performance Demanded in Servo Systems

OMNUC G Series

NEW

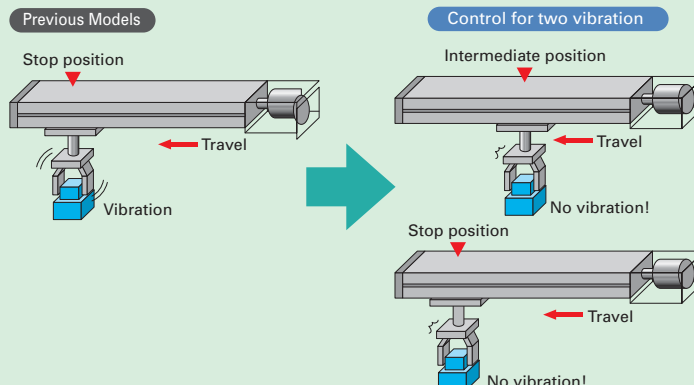
Built-in MECHATROLINK-II* Communications



Wider Range of Compact Servomotors and Servo Drives with Increased Machine Compatibility, Plus Fast Positioning with Improved Response and Vibration Control

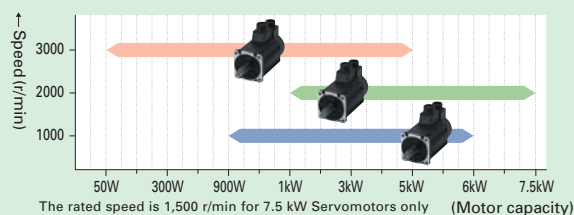
Reduce mechanical vibration with the vibration control function.

By removing the vibration frequency components between the stop position and the intermediate position, vibration that occurs due to low mechanical rigidity can be suppressed. (Control for two vibration frequencies)



A wide range of Servomotors is available to meet application needs.

You can select a suitable Servomotor from a wide range of Servomotor capacities to cater to various applications.

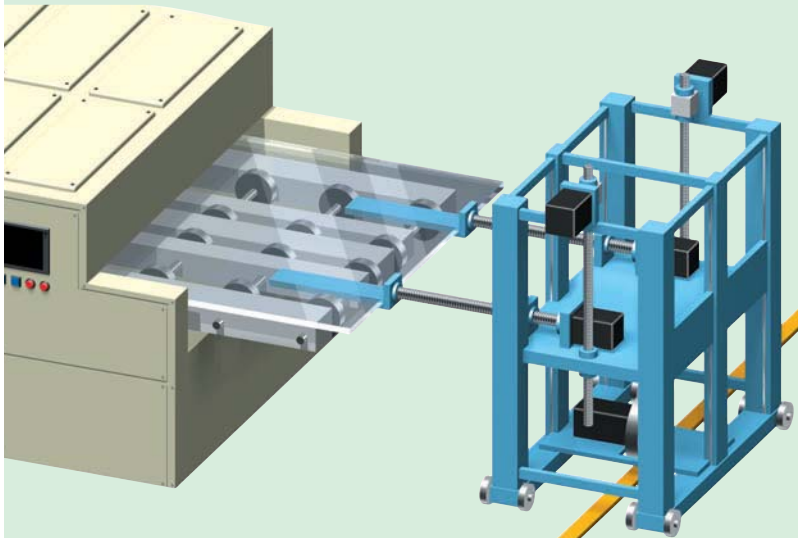


Save Space, save

Error Recovery Is No Problem with an Absolute Encoder!

For example, with this equipment ...

- Liquid-crystal PCB
- Conveyor Equipment Stacker



Advantages

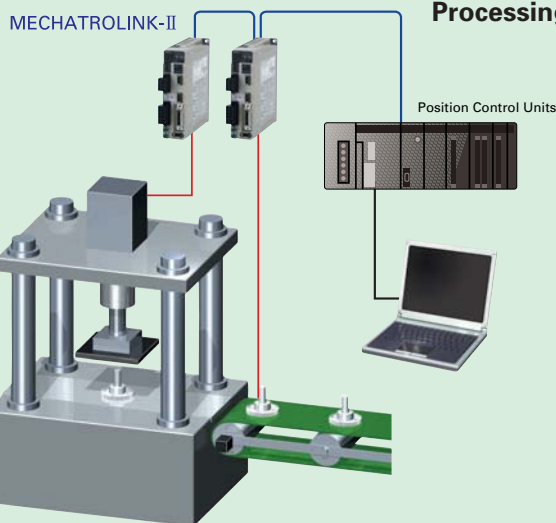
- Absolute encoders are supported, making it possible to eliminate origin positioning in daily equipment startup.
- Axes can be started simultaneously by using synchronous communications control.
- Low-capacity to medium-capacity Servomotors are provided.

• Faster Startup!
• A Stable Liquid-crystal PCB Conveyor!

Can Be Used for Component Press Fitting and Pressing Control!

For example, with this equipment ...

- Automotive Parts Assembly Equipment
- Metalworking and Resin Processing Equipment



Advantages

- Position, speed, and torque control (torque limit) can be achieved.
- While performing position control, operation can be switched to torque control.
- Highly synchronized startup performance eliminates startup delays between axes.

Absolute Encoders, Torque Control, and Many Other Applications Are All Supported by a Single Unit.

* : MECHATROLINK-II is a registered trademark of the MECHATROLINK Members Association.

wiring, save time

High-speed Response, High-speed Rotation, and High-precision Control.
Greatly Enhanced Machine Performance and Productivity.

OMNUC W Series Built-in MECHATROLINK-II* Communications



• Reduced Positioning Stabilizing Time

Oscillation control has been strengthened through expanded control algorithms, enabling the positioning stabilizing time to be reduced to one third (compared with the OMRON U Series) even for machines with low rigidity.

• High-speed and High-precision Drive

A high-speed rotation of 5,000 r/min has been attained. Positioning accuracy has also been improved by employing high-resolution serial encoders (16,384 pulses/revolution, 32,768 pulses/revolution). Torque control accuracy (repeatability) has been improved by $\pm 2\%$.

• Smooth Operation

Motor speed ripple has been greatly reduced, for smooth operation even at low speeds.

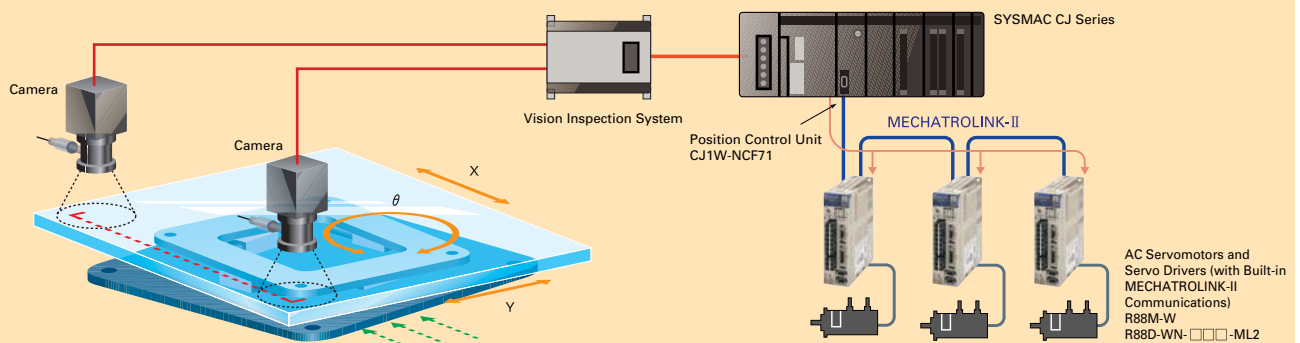
• A Full Lineup of Servomotors

The W Series lineup offers a wide variety of Servomotors, including Servomotors with a brake, Servomotors with a gear, and Flat-style Servomotors. These are available with rated rotation speeds of 3,000 r/min, 1,500 r/min, and 1,000 r/min. Select the model to meet your application requirements.

High-speed and High-precision Positioning!

For example, with this equipment ...

• Equipment for Attaching Liquid-crystal PCBs • Etching Equipment



Advantages

- Wiring and work time are reduced by using MECHATROLINK-II.
- Data can be centrally managed at the host for improved settings and maintenance.
- Axes can be started simultaneously by using synchronous communications control.

**Easy Building of
Multi-axis Systems.**

Save Space, save

Easy-to-Use “Plug-and-Play” Servo Greatly Reduces Startup Time.

SMARTSTEP Junior Built-in MECHATROLINK-II* Communications

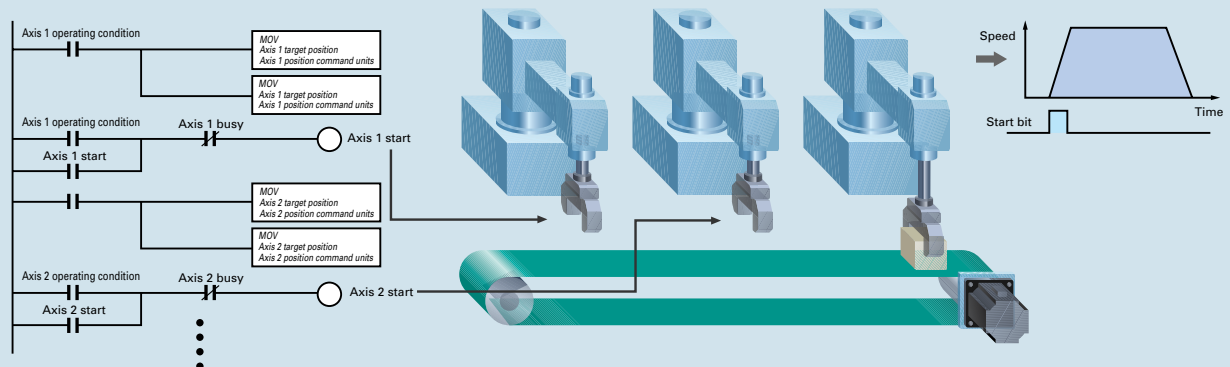


SMARTSTEP Junior with Built-in MECHATROLINK-II Communications Is Ideal for Simple Positioning System Applications.

The Easy Positioning You Expect!

For example, with this equipment ...

● Automatic Assembly Equipment



Advantages

- Absolute and relative positioning of multiple axes can be performed by manipulating bits directly from the PLC.
- The target speed can be changed during positioning by sending another command.

Easy Control in Combination with the NC□71!

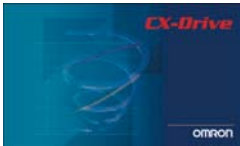
* : MECHATROLINK-II is a registered trademark of the MECHATROLINK Members Association.

wiring, save time

CX-Drive Support Software Version Ver.1.6

The CX-Drive is a software application that enables setting, downloading, uploading, and comparing parameters, test runs and tuning, and monitoring and data tracing for Inverters and Servos.

OMNUC G Series,SMARTSTEP2 Series are supported (2008.5 ~)

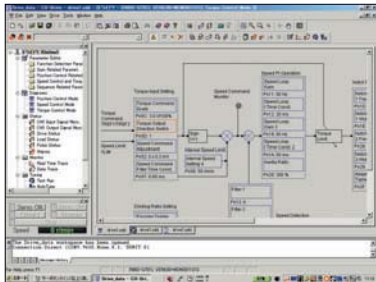
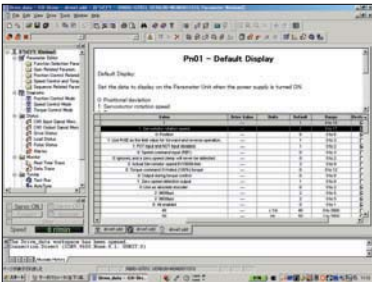


System Configuration Example



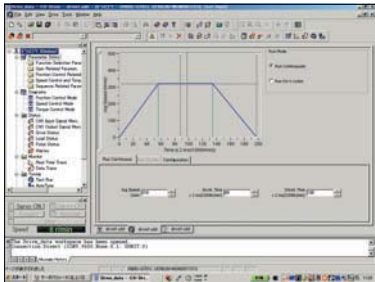
Parameter Editing Functions

Easy and Dependable Parameter Editing for Inverters and Servos
Easily Check Drive Parameters and Upload/Download Only Selected Parameters
Edit Parameters in Graphic Form Display
Parameters in Diagrams



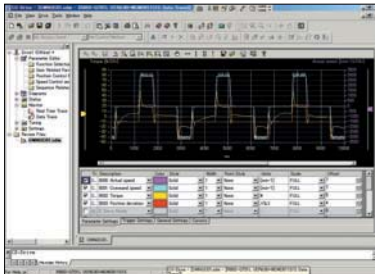
Make adjustments for Servos and perform testing

Servo autotuning (R7D-AP and R88D-WT only)
Servo test operation (R7D-AP and R88D-WT only)
Servo offset adjustment (R7D-AP and R88D-WT only)
Servo absolute encoder setting (R88D-WT only)



Data Tracing as Easy as Operating an Oscilloscope

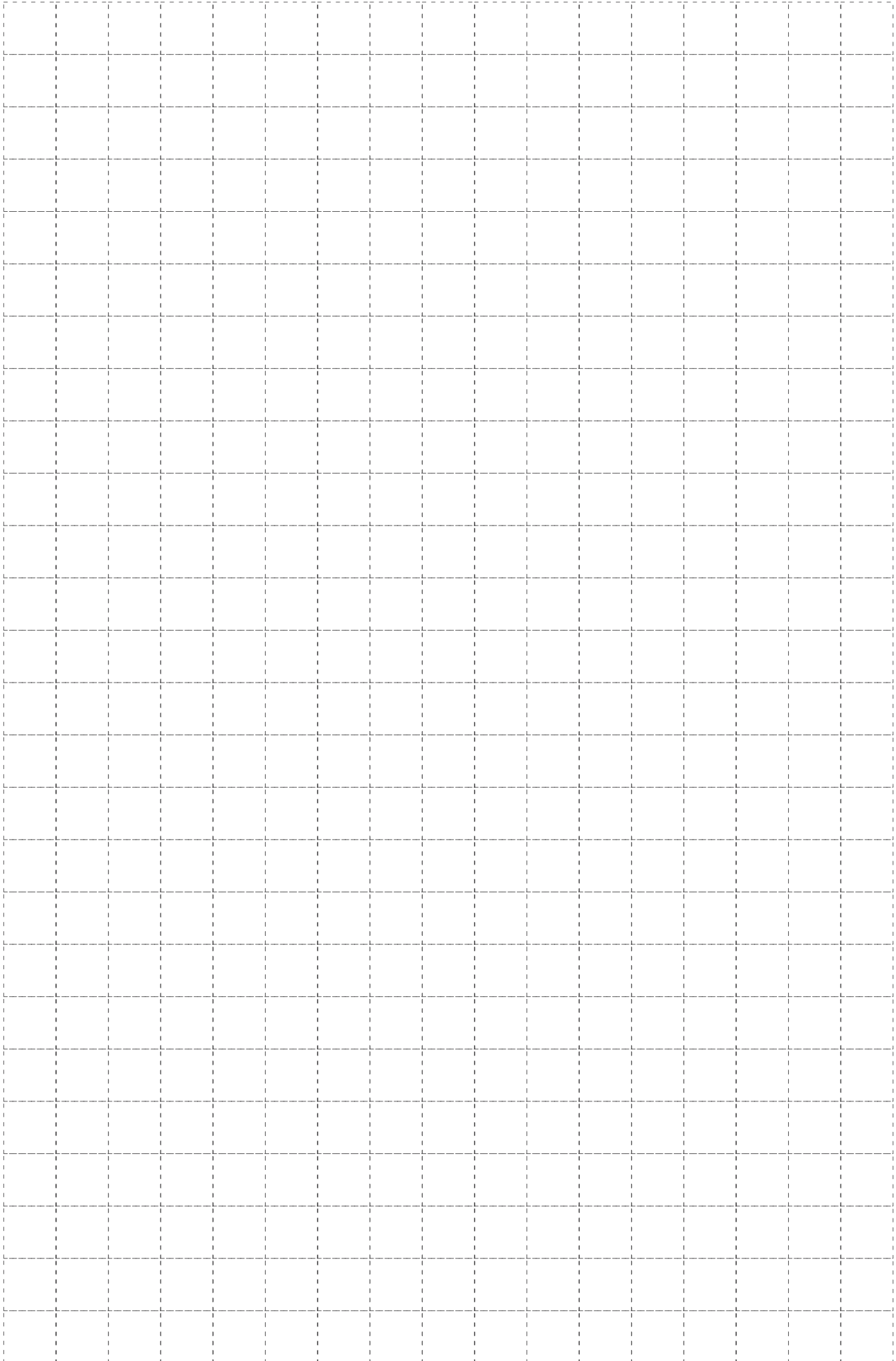
Enables detailed analysis of waveforms for speed, torque, or other values.
Note: A realtime trace function is also supported to monitor long-term trends for servos and inverters.



Specification

Model		Basic function	Making file
Servo	Inverter		
SMARTSTEP2 series with Pulse row output (R7D-ZN□-ML2) NEW SMARTSTEPA series with Pulse row output (R7D-AP) OMNUC G series with General-purpose Pulse or Analog inputs (R88D-GT) NEW OMNUC W series with Built-in MECHATROLINK-II Communications (R88D-GN□-ML2) NEW OMNUC W series with General-purpose Pulse or Analog inputs (R88D-WT) OMNUC W series with Built-in MECHATROLINK-II Communications (R88D-WN□-ML2)	3G3JV 3G3MV 3G3RV 3G3RV-V1 3G3□ X series Correspondence schedule sheet	• Automatically Detect Drives • Parameter Editing Functions • Parameter Editing Functions • Realtime Tracing	• Workspace file (.sdw) • Drive file (.sdd) • Monitor review file (.sdm) • Text file or drive file (.csv or .txt)

MEMO



Concepts

New Product Information/
Motion Network LineupController
FeaturesServo System
Features

CX-Drive

Servomotors, and
Servo Drives
Selection GuideControllers
Position Control UnitsControllers
Motion Control Units

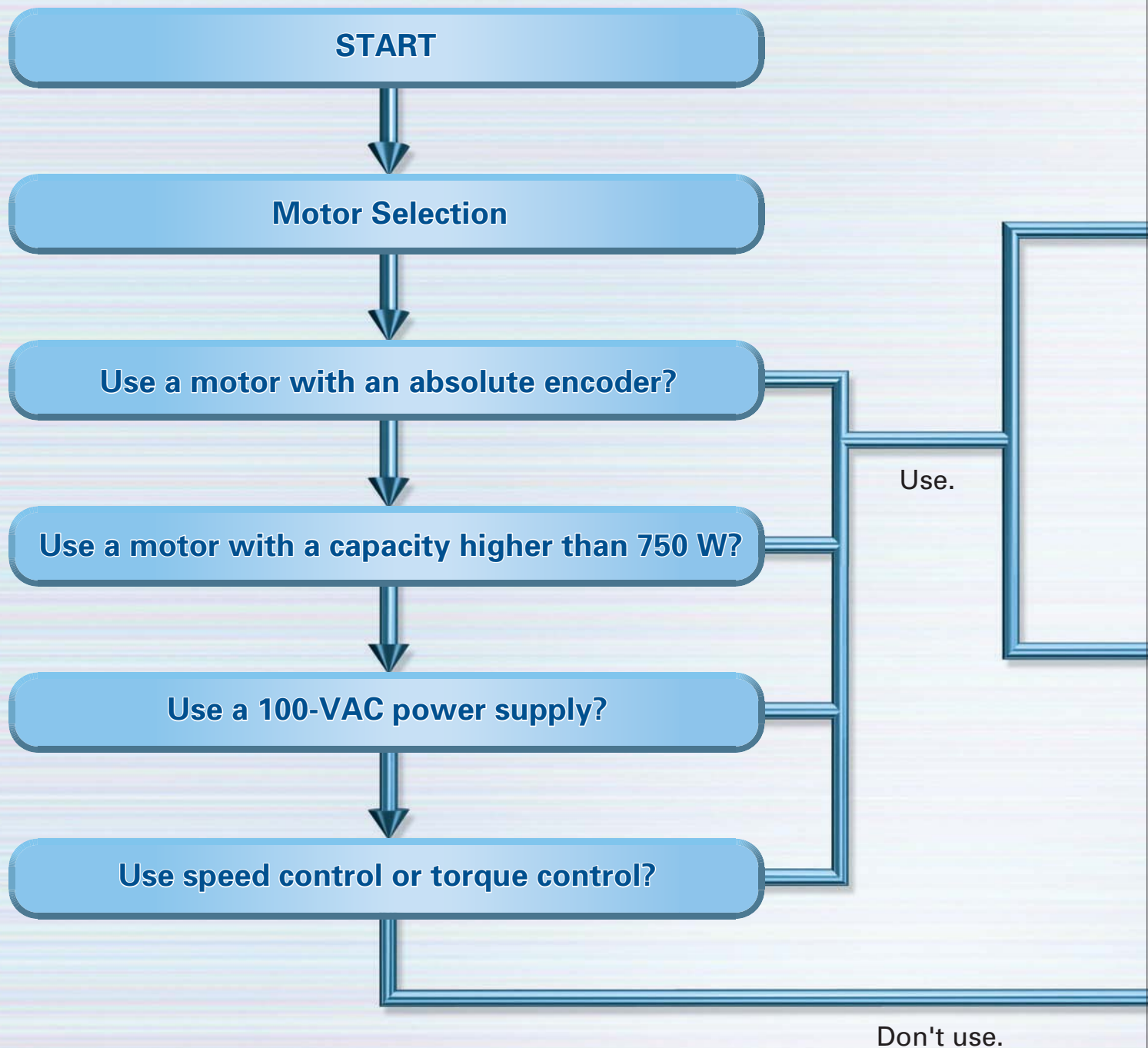
OMNUC G

OMNUC W

SMARTSTEP
Junior

Selection Guide

Select the Ideal Motor for Application with



MECHATROLINK-II.*

OMNUC G Series

NEW

Built-in MECHATROLINK-II Communications

Page
C-1

OMNUC W Series

Built-in MECHATROLINK-II Communications

Page
D-1

SMARTSTEP Junior

Built-in MECHATROLINK-II Communications

Page
E-1

OMNUC G series Servo Drives with Built-in MECHATROLINK-II Communications provide the following features.

Select an OMNUC G series Servo Drives with Built-in MECHATROLINK-II Communications to use these features.

Torque Limit

- Torque control is used to press a machine against a workpiece or other object with a fixed force.
- It is used to prevent applying an excessive force or torque on the mechanical system to protect the motor and mechanical system.

S-curve Acceleration/Deceleration

- S-curve acceleration/deceleration can be used to enable smoother accelerations/decelerations.

Brake Timing

- The brake timing can be set to protect the machine and the holding brake of the Servo Motor from damage.
- The brake output timing can be set.

Deviation Counter Overflow Level

- An overflow level can be set for the deviation counter to prevent excessive overflow.
- The deviation counter level at which warnings and alarms are given to detect positioning loop errors can be set.

Overtravel Stop Selection

- The method used to stop the motor when a limit input turns OFF can be set.

Backlash Compensation

- Backlash compensation can be set to correct for backlash when the machine performs reciprocating operation.

Note : Refer to information on the parameters for details.

* : MECHATROLINK-II is a registered trademark of the MECHATROLINK Members Association.

Concepts

New Product Information/
Motion Network Lineup

Controller Features

Servo System Features

CX-Drive

Servomotors, and
Servo Drives
Selection GuideControllers
Position Control UnitsControllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

SYSMAC CJ/CS-series MECHATROLINK-II-compatible Position Control Unit CJ1W-NC□71/CS1W-NC□71

Decrease TCO with Simple Operation, Reduced Wiring, Batch Settings, and Batch Management

• Overview

Control Servos for up to 16 axes in a motion network with one Position Control Unit that supports MECHATROLINK-II (See note).

• Features

• Even Smaller

Positioning of up to 16 axes can be controlled with a body the size of one CS/CJ-series Unit.

The compact body provides a perfect fit to meet the need for downsizing of equipment for multi-axis control.

• Single-cable Connection with Flexible Wiring Placement

With MECHATROLINK-II, connecting to the Servo Drive is easy. Just use a single cable (2-core shielded twisted-pair cable). Reduced wiring, with a total cable length of 50 m (or 30 m for 16 axes), allows more freedom in constructing systems.

• Less Time Spent on Startup and Maintenance

Servo parameters can be set from the PLC.

This means that settings and adjustments can be performed from one location rather than having to connect to each Servo Drive separately.

• Simple Expansion

An easily expandable system can be constructed that is just as efficient now with a few axes or later with up to 16 axes.

• Linked Operation of Multiple Axes with MA Functionality

The addition of an Interpolation Compensation Axis Stop Mode Setting and Interaxial Allowance Deviation Setting to linear interpolation compensation enables easier setting of linked operation between axes.

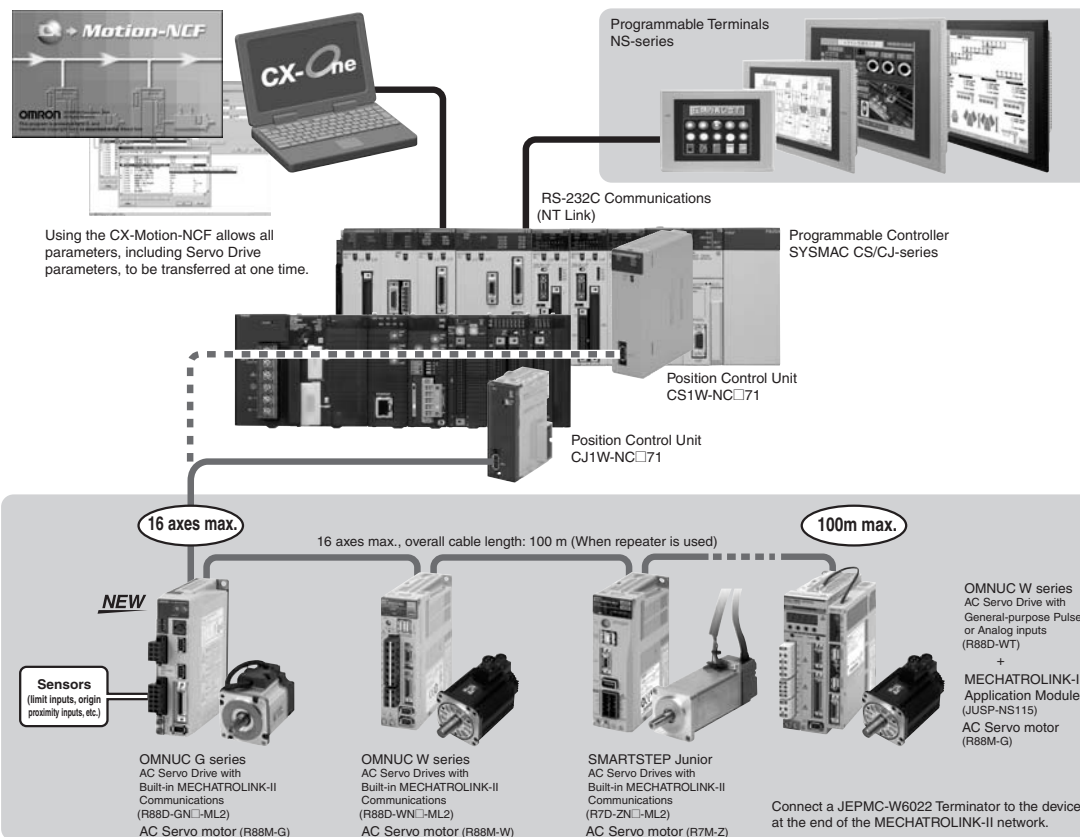


CJ1W-NC271
CJ1W-NC471
CJ1W-NCF71
CJ1W-NCF71-MA

CS1W-NC271
CS1W-NC471
CS1W-NCF71

System Configuration

*MECHATROLINK-II is a registered trademark of the MECHATROLINK Members Association.



Ordering Information

● CJ-series Units

Unit classification	Product name	Specifications		No. of unit numbers allocated	Current consumption (A)		Model	Standards
		Control output interface	No. of axes		5 V	24 V		
CJ1 CPU Bus Units	MECHATROLINK-II-compatible Position Control Units	Control commands executed by MECHATROLINK-II synchronous communications. 16 axes max. Direct operation by ladder programming. Control mode: Position control, speed control, or torque control	2	1	0.36	—	CJ1W-NC271 NEW	UC1, CE
			4				CJ1W-NC471 NEW	
			16				CJ1W-NCF71	
			16				CJ1W-NCF71-MA NEW	

● CS-series Units

Unit classification	Product name	Specifications		No. of unit numbers allocated	Current consumption (A)		Model	Standards
		Control output interface	No. of axes		5 V	24 V		
CJ1 CPU Bus Units	MECHATROLINK-II-compatible Position Control Units	Control commands executed by MECHATROLINK-II synchronous communications. 16 axes max. Direct operation by ladder programming. Control mode: Position control, speed control, or torque control	2	1	0.36	—	CS1W-NC271 NEW	UC1, CE
			4				CS1W-NC471 NEW	
			16				CS1W-NCF71	

● Support Software

Product name	Specifications	License	Media	Model	Standards
CX-One FA Integrated Tool Package Ver. 3.□	The CX-One is a package that integrates the Support Software for OMRON PLCs and components. CX-One runs on the following OS. Windows 2000 (Service Pack 3a or higher), XP, or Vista CX-One Ver. 3.□ includes CX-Motion-NCF Ver. 1.□. For details, refer to the CX-One catalog (Cat. No. R134).	1 license (See note 1.)	CD	CXONE-AL01C-V3	—
			DVD (See note 2.)	CXONE-AL01D-V3	

Note: 1. Site licenses are available for the CX-One (3, 10, 30, or 50 licenses).
2. When purchasing the DVD format, verify the computer model and DVD drive specifications before purchasing.

International Standards

- The standards indicated in the "Standards" column are those current for UL, CSA, cULus, NK, and Lloyd standards and EC Directives as of the end of March 2007. The standards are abbreviated as follows: U: UL, U1: UL (Class I Division 2 Products for Hazardous Locations), C: CSA, UC: cULus, UC1: cULus (Class I Division 2 Products for Hazardous Locations), CU: cUL, N: NK, L: Lloyd, and CE: EC Directives.
- Ask your OMRON representative for the conditions under which the standards were met.

● MECHATROLINK-related Devices and Cables (Manufactured by Yaskawa Corporation)

Name	OMRON model number	Yaskawa model number
MECHATROLINK-II Cables (with ring core and USB connector on both ends)	0.5 m	FNY-W6003-A5
	1.0 m	FNY-W6003-01
	3.0 m	FNY-W6003-03
	5.0 m	FNY-W6003-05
	10.0 m	FNY-W6003-10
	20.0 m	FNY-W6003-20
	30.0 m	FNY-W6003-30
MECHATROLINK-II Terminating Resistor	Terminating resistance	FNY-W6022
MECHATROLINK-II Repeater	Communications Repeater	FNY-REP2000

Note: MECHATROLINK-related Devices and Cables are manufactured by Yaskawa Corporation, but they can be ordered directly from OMRON using the OMRON model numbers. (Yaskawa-brand products will be delivered even when they are ordered from OMRON.)

● Accessories

None

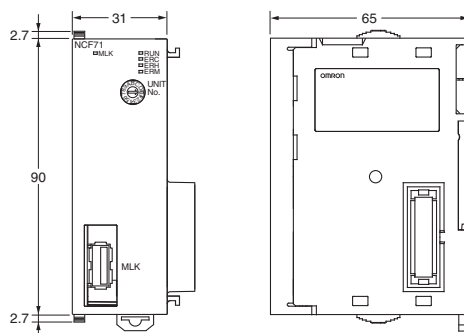
Functions and Performance Specifications

Item		Specifications	
Model		CJ1W-NC□71	CS1W-NC□71
Applicable PLCs		CJ Series	CS Series
Unit classification		CPU Bus Unit	
Possible unit number settings		0 to F	
I/O allocations	Common Operating Memory Area	Words allocated in CPU Bus Unit Area: 25 words (15 output words, 10 input words)	
	Axis Operating Memory Area	Allocated in one of the following areas (user-specified): CIO, Work, Auxiliary, Holding, DM, or EM Area. Number of words allocated: 50 words (25 output words, 25 input words) × Highest axis No. used	
Compatible devices		OMNUC G-series AC Servomotors/Servo Drives with Built-in MECHATROLINK-II Communications OMRON W-series Servo Drives (equipped with MECHATROLINK-II Application Module or built-in MECHATROLINK-II communications) OMNUC W-series AC Servomotors/Servo Drives with Built-in MECHATROLINK-II Communications OMRON SMARTSTEP Junior Servo Drives (Built-in MECHATROLINK-II communications)	
Control method		Control commands executed using MECHATROLINK-II synchronous communications.	
Maximum number of controlled axes		16 axes	
Control command range	Position commands	-2,147,483,648 to 2,147,483,647 (command units) (The command unit depends on the Electronic Gear Settings in the Servo Parameter.)	
	Speed command for position control	0 to 2,147,483,647 (command units/s)	
	Acceleration/deceleration speeds for position control	1 to 65,535 (10,000 command units/s ²)	
	Speed command range for speed control	-199.999% to 199.999% (0.001% increments) The upper limit of the speed command range depends on the specifications of the Servo Drive.	
	Torque command range for torque control	-199.999% to 199.999% (0.001% increments) The upper limit of the torque command range depends on the specifications of the Servo Drive.	
Control functions	Servo lock/unlock	Locks or unlocks the Servo.	
	Position control	Positions to an absolute position or relative position according to the target position and target speed specified from the ladder program. (Linear interpolation for up to 4 axes is possible with appropriate settings.)	
	Origin determination	<ul style="list-style-type: none"> • Origin search: Establishes the origin using the specified search method • Present position preset: Changes the present position to a specified position to establish the origin. • Origin return: Returns the axis from any position to the established origin. • Absolute encoder origin: Establishes the origin using a Servomotor that has an absolute encoder, without having to use an origin search. 	
	Jogging	Moves an axis at a fixed speed in the forward rotation or reverse rotation direction.	
	Interrupt feeding	Performs positioning by moving the axis a fixed amount when an external interrupt input is received while the axis is moving.	
	Speed control	Performs speed control by sending a command to the Servo Drive speed loop.	
	Torque control	Performs torque control by sending a command to the Servo Drive current loop.	
	Stop functions	Deceleration stop: Decelerates the moving axis to a stop. Emergency stop: Positions the moving axis for the number of pulses remaining in the deviation counter and then stops the axis.	
	Acceleration/deceleration curves	Sets one of the following: a trapezoidal (linear) curve, an exponential curve, or an S-curve (moving average).	
	Torque limit	Restricts the output torque during axis operation.	
	Override	Multiplies the axis command speed by a specified ratio. Override: 0.01% to 327.67%	
	Servo parameter transfer	Reads and writes the Servo Drive parameters from the ladder program in the CPU Unit.	
	Monitoring function	Monitors the control status of the Servo Drive, such as the command coordinate positions, feedback position, current speed, and torque.	
	Software limits	Limits software operation within the positioning range during position control.	
	Backlash compensation	Compensates for the amount of play in the mechanical system according to a set value.	
External I/O	Control Unit	One MECHATROLINK-II interface port	
	Servo Drive I/O	Forward/reverse rotation limit inputs, origin proximity inputs, external interrupt inputs 1 to 3 (can be used as external origin inputs)	
Self-diagnostic functions		Watchdog, flash memory check, memory corruption check	
Error detection functions		Overtravel, Servo Drive alarm detection, CPU error, MECHATROLINK communications error, Unit setting error	
Internal current consumption		360 mA max. at 5 V DC	360 mA max. at 5 V DC
Dimensions		90 × 31 × 65 mm (H × W × D)	130 × 35 × 101 mm (H × W × D)
Weight		95 g max.	188 g max.
Ambient operating temperature		0 to 55°C	0 to 55°C

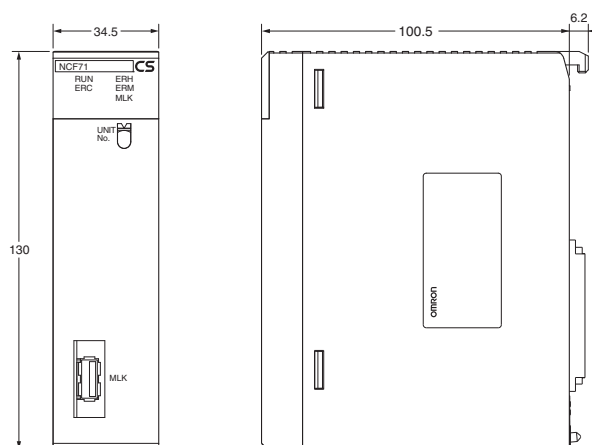
Dimensions

(Unit: mm)

CJ1W-NCF71



CS1W-NCF71



Related Manual

English Cat. No.	Japanese Cat. No.	Type	Name
W426	SBCE-323	CS1W-NC□71/ CJ1W-NC□71 (-MA)	CS1W/CJ1W-NC□71 (-MA) CS/CJ-series MECHATROLINK-II-compatible Position Control Unit User's Manual
W436	SBCE-328	CXONE-AL□□C/D-V3	CX-Motion-NCF Operation Manual
—	SBCE-055	CS1W-NCF71/CJ1W-NCF71	CS1W-NCF71/CJ1W-NCF71 Position Control Unit (ONNUC G-series) Technical Guide
—	SBCE-042	CS1W-NCF71/CJ1W-NCF71	CS1W-NCF71/CJ1W-NCF71 Position Control Unit (ONNUC W-series) Technical Guide

SYSMAC CJ/CS-series MECHATROLINK-II-compatible Motion Control Units

CJ1W-MCH71/CS1W-MCH71

Improve Equipment Design Efficiency and Shorten Tact Time

• Overview

Control Servos for up to 16 axes in a motion network with one Position Control Unit that supports MECHATROLINK-II (See note).

• Features

- High-precision motion control with less wiring using MECHATROLINK-II Servo communications with superior concurrency.
- Many synchronization and axis control commands are supported to aid existing synchronized control applications and improve motion control tact time.
- Program control commands (such as branching commands) and various arithmetic operations are supported for maximum motion programming efficiency.



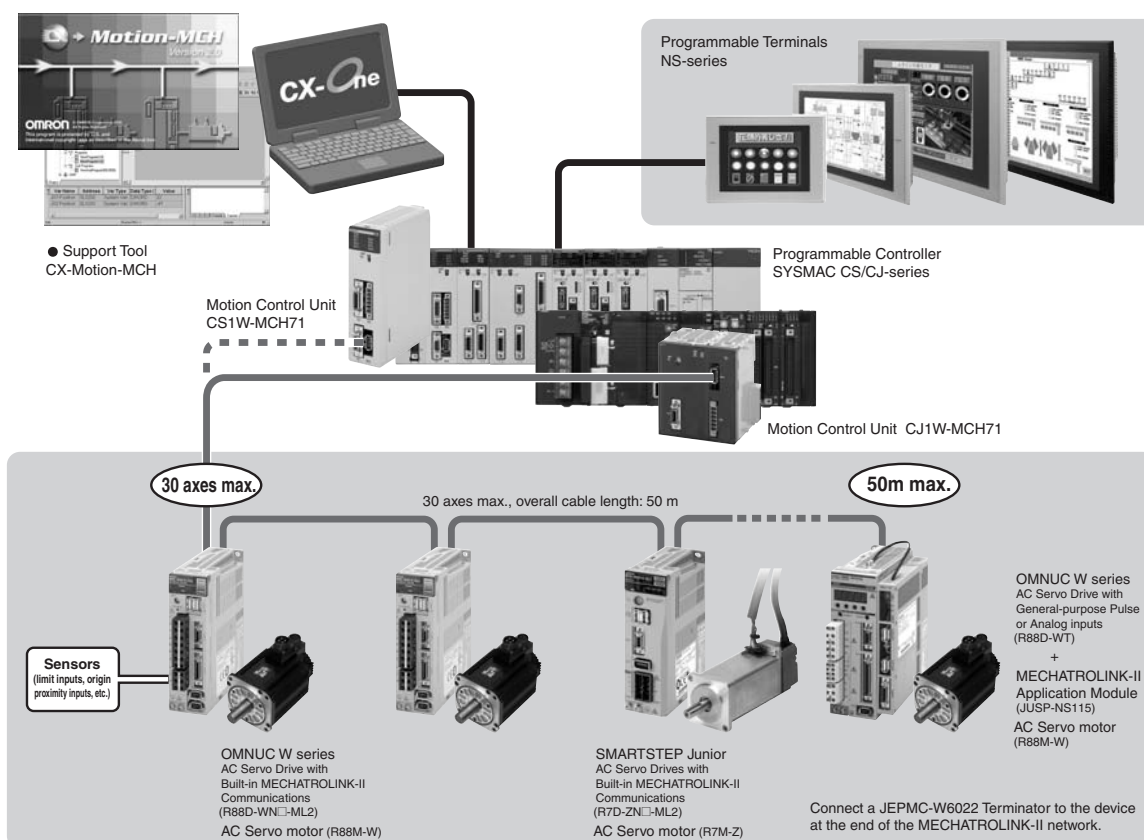
CJ1W-MCH71



CS1W-MCH71

System Configuration

*MECHATROLINK-II is a registered trademark of the MECHATROLINK Members Association.



* CS1W-MCH71, and CJ1W-MCH71 cannot be connected with OMNUC G Series.

Ordering Information

● Units

Product name	Specifications	No. of unit numbers allocated	Current consumption (A)			Model	Standards
			5 V	24 V	26 V		
MECHATROLINK-II compatible Motion Control Unit	Control modes: Position, speed, or torque control via MECHATROLINK-II Control axes: 32 axes max. (30 physical axes, 2 virtual axes) Internal programming language: Special motion control language	1	0.6	—		CJ1W-MCH71	UC1, CE
			0.80		—	CS1W-MCH71	
CX-One FA Integrated Tool Package Ver. 3.□	The CX-One is a package that integrates the Support Software for OMRON PLCs and components. CX-One runs on the following OS. Windows 2000 (Service Pack 3a or higher), XP, or Vista CX-One Ver. 3.□ includes CX-Motion-MCH Ver. 2.□. For details, refer to the CX-One catalog (Cat. No. R134).		1 license Media: CD (See note 1.)			CXONE-AL01C-V3	
			1 license Media: DVD (See notes 1 and 2.)			CXONE-AL01D-V3	
CAM Data Creation Tool	Windows 98SE/Me/NT4.0 (Service Pack6a)/ 2000 (Service Pack 3a or higher), or XP		1 license Media: CD (See note 1.)			WS02-MOPC2	

Note: 1. Site licenses are available for the CX-One (3, 10, 30, or 50 licenses).

2. When purchasing the DVD format, verify the computer model and DVD drive specifications before purchasing.

International Standards

- The standards indicated in the "Standards" column are those current for UL, CSA, cULus, NK, and Lloyd standards and EC Directives as of the end of March 2007. The standards are abbreviated as follows: U: UL, U1: UL (Class I Division 2 Products for Hazardous Locations), C: CSA, UC: cULus, UC1: cULus (Class I Division 2 Products for Hazardous Locations), CU: cUL, N: NK, L:Lloyd, and CE: EC Directives.
- Ask your OMRON representative for the conditions under which the standards were met.

● HATROLINK-related Devices and Cables (Manufactured by Yaskawa Corporation)

Name		OMRON model number	Yaskawa model number
MECHATROLINK-II Cables (with ring core and USB connector on both ends)	0.5 m	FNY-W6003-A5	JEPMC-W6003-A5
	1.0 m	FNY-W6003-01	JEPMC-W6003-01
	3.0 m	FNY-W6003-03	JEPMC-W6003-03
	5.0 m	FNY-W6003-05	JEPMC-W6003-05
	10.0 m	FNY-W6003-10	JEPMC-W6003-10
	20.0 m	FNY-W6003-20	JEPMC-W6003-20
	30.0 m	FNY-W6003-30	JEPMC-W6003-30
MECHATROLINK-II Terminating Resistor	Terminating resistance	FNY-W6022	JEPMC-W6022
MECHATROLINK-II Repeater	Communications Repeater	FNY-REP2000	JEPMC-REP2000

Note: MECHATROLINK-related Devices and Cables are manufactured by Yaskawa Corporation, but they can be ordered directly from OMRON using the OMRON model numbers. (Yaskawa-brand products will be delivered even when they are ordered from OMRON.)

● Accessories

None

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

Performance Specifications

Item		Specifications	
Model		CJ1W-MCH71	CS1W-MCH71
Applicable PLCs		CJ1-H/CJ1M PLCs with CPU Units with unit version 2.0 or later	CS Series, new version (CS1□-CPU□□H)
Unit classification		CPU Bus Unit	
Mounting		CPU Rack or CJ-series Expansion Rack	CPU Rack or CS-series Expansion Rack
Method for data transfer with CPU Unit	CIO Area for CPU Bus Unit	Occupies the area for 1 unit (25 words) For units and tasks: 11 to 25 words (Depending on the number of motion tasks)	
	DM Area for CPU Bus Unit	Occupies the area for 1 unit (100 words) For units and tasks: 32 to 74 words (Depending on the number of motion tasks)	
	Custom Bit Area	For axes: 0-64 words (Depending on the greatest number of the axis used)	
	Custom Data Area	For axes: 0-128 words (Depending on the greatest number of the axis used)	
	Custom Data Area	For General I/O: 0-1280 words (Depending on setting)	
Controlled Devices		MECHATROLINK-II below supported <ul style="list-style-type: none"> W-series Servo Drive with built-in communications functions W-series Servo Drive (OMRON) + Communications I/F Unit (YASKAWA) Various I/O units (YASKAWA) Up to 30 nodes <ul style="list-style-type: none"> When MECHATROLINK-II devices are connected up to 16 nodes (within 30 m) or 15 nodes (within 50 m), a repeater unit is not required. A repeater unit is required to connect MECHATROLINK-II devices more than the cases described above. 	
Built-in program language		Dedicated motion control language	
Control	Control method	MECHATROLINK-II <ul style="list-style-type: none"> Position commands, Speed commands, Torque commands 	
	Number of controlled axes	32 axes max. Physical axes/Virtual axes: 30 axes max. (Either can be selected for each axis.) Dedicated for virtual axes: 2 axes	
Operating modes		RUN mode, CPU mode, Tool mode/System (Depending on the tool)	
Automatic/Manual Mode		Automatic mode: Executing built-in programs of MC Unit controls motion. Manual mode: Executing commands from CPU Unit (PC interface area) controls motion. Note: The Automatic or Manual Mode is set according to the PC Interface area of the CPU Unit.	
Control unit		Minimum setting unit: 1, 0.1, 0.01, 0.001, 0.0001 (Units: mm, inch, deg, pulse)	
Maximum position command value		-2147483648 to 2147483647 pulses (signed 32-bit) Mode for unlimited axes feeding is possible. Example: With 16384 pulse/rev, Minimum setting unit: 0.001mm, 1 mm/rev, the position command value range will be from -1310720000 to 131071999 command units.	
Control operations based on commands from the CPU Unit	Servo lock/unlock	Executes Servo Drive lock or unlock.	
	Jogging	Executes continuous feeding independently for each axis, by means of speed set in system parameter x override.	
	Origin search	Defines the machines origin according to the search method set in the system parameters. Can be executed with an absolute encoder.	
	Absolute origin setting	Sets the origin when an absolute encoder is used. Offset value: Signed 32-bit (pulses)	
	Machine lock	Prohibits the output of motion commands to the axes.	
	Single block	Executes the motion program one block at a time.	
Control Operations according to motion program	Positioning (PTP)	Executes positioning independently for each axis at the speed set in the system parameters. Simultaneous specification: 8 axes max. /block Simultaneous execution: 32 blocks max. /unit	
	Linear interpolation	Executes linear interpolation for up to 8 axes simultaneously at the specified interpolation speed. Simultaneous specification: 8 axes max. /block Simultaneous execution: 32 blocks max. /system	
	Circular interpolation	Executes clockwise or counterclockwise circular interpolation for two axes at their specified interpolation speed. Simultaneous specification: 2 or 3 axes/block Simultaneous execution: 16 blocks max. /system	
	Other functions	Origin search, Interrupt feeding, Time-specified Positioning, Traverse function, Independent Electronic Cam, Synchronous Electronic cam, Link operation, Electronic Shaft, Trailing synchronous operation, Speed command, Torque command	
Acceleration /deceleration curve, Acceleration/deceleration time		Trapezoidal or S-shape, 60000 ms max. (S-shape time constant: 30000 ms max.)	
External I/O		One port for MECHATROLINK-II Deceleration stop input (or servo-OFF stop): 1 pt General input: 2 pts General output: 2 pts	
Feed rate		Rapid feed rate: 1 to 2147483647 [Command unit/min] Interpolation feed rate: 1 to 2147483647 [Command unit/min]	
Override		0.00 to 327.67% (Setting unit: 0.01%, can be specified for each axis or task)	

Item		Specifications	
Program	Number of tasks, number of programs	Up to 8 tasks and 256 programs/Unit (parallel branches with tasks: 8/task max.)	
	Program numbers	0000 to 0499: Main programs for motion tasks 0500 to 0999: Sub-programs for motion tasks	
	Program capacity	2 Mbytes 8000 blocks max. /unit by motion program conversion. Number of blocks: 800 blocks/program	
	Data capacity	Position data: 10,240 points/Unit; Cam data: 32 max.; 16,000 points/Unit	
	Sub-program nesting	5 levels max.	
	Start	Starts program operation from program (of another task)	
	Deceleration stop	Executes deceleration stop regardless of block.	
	Block stop	Executes deceleration stop at the end of the block currently being executed.	
	Single-block mode	The program is executed one block at a time.	
Saving programs and data		Memory Card backup (in CPU Unit, 100,000 times max.)	
Self-diagnostic function		Watchdog, RAM check, etc.	
Error detection function		Deceleration stop input, unit number error, CPU Unit error, software limit over errors, etc.	
Error log function		The error log is to be read from the CPU Unit by means of the IORD instructions as needed.	
External power supply voltage		24 V DC (21.6 to 26.4 V DC)	
Internal current consumption		0.6 A or less for 5 VD	0.8 A or less for 5 VDC
Weight (Connectors excluded)		210 g max.	300 g max.

Note: 1. To determine the number of MC Units that can be mounted under one CPU Unit, examine the followings:

- (1) Maximum number of CPU Bus Units that can be allocated words in the CPU Unit being used.
- (2) The capacity of the power supply unit used for each rack (CPU Rack and Expansion Rack) and the current consumption of the units mounted on the racks.
(Refer to the CPU Unit's operation manual for details on calculation methods.)
2. The user must prepare the required power supply.
3. The CJ1W(-MCH71) requires the space used for three standard Units.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

Functions

● Electronic Shaft (Electronic Gear) (CONNECT)

This function synchronizes with the main axis at the specified gear ratio. It allows for reductions in mechanical functions and labor requirements for machinery maintenance.

● Electronic Cam (CAM, CAMBOX)

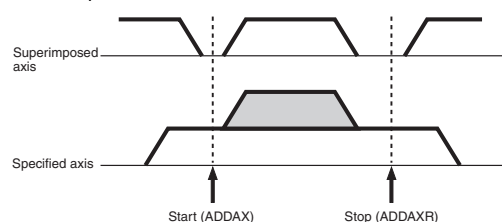
An independent electronic cam can be positioned according to execution times specified in the cam data, and a synchronized electronic cam can be operated according to a cam table in synchronization with a specified main axis. A total of 16,000 points for all Units combined can be included for the cam data, and 32 cam tables can be set, enabling complex operations.

● Virtual Axes

Any axis can be set as an axis performing an ideal movement. Setting it as the main axis for synchronized control simplifies design and debugging of programs and adjustment of synchronized operations. Also, when slippage occurs in motor operation and workpiece operation, the amount of compensation (for the amount of slippage) can be set as the target value for the virtual axis, and the compensation operation can be easily executed by means of the add axis travel function.

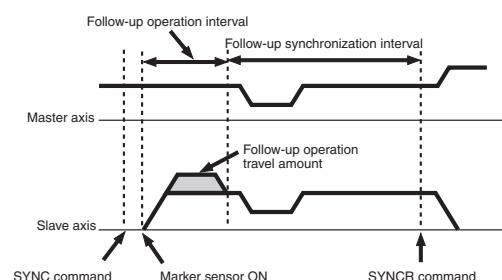
● Add Axis Travel (ADDAX, ADDAXR)

This function adds the operation of a superimposed axis to a specified axis, making it easy to perform compensation in feeder and synchronization operations.



● Follow-up Synchronization (SYNC, SYNCR)

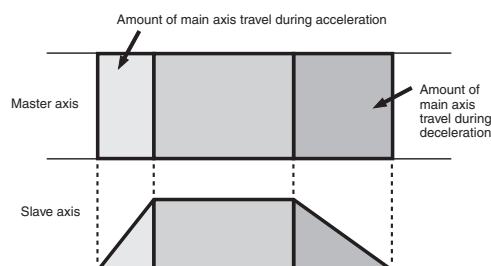
From standby status, this function starts follow-up operation when the marker sensor turns ON and executes follow-up synchronization with the main axis. This is ideal for applications that process workpieces without stopping the line.



● Electronic Links (SYNC)

This function enables the specified synchronized operation with acceleration at the start of synchronization, a ratio during synchronization, and deceleration at the end of synchronization.

These specifications are specific for the actual application operation, enabling easy achievement of various types of synchronization operations.



● Other Operations

Various applications are made possible by means of a wide range of commands, such as MOVE TIME (MOVET), CHANGE TARGET (MOVEMODI), LATCH (LATCH: With hardware latch and window functions), TRAVERSE (MOVETRAV), TORQUE (TORQUE, TORQUER), SPEED (SPEED, SPEEDR).

Commands

Classification	Name	Command	Function
Axis movement	MOVE, LINEAR INTERPOLATION, CIRCULAR INTERPOLATION	MOVE, MOVEL, MOVEC	Moves axes individually, or using linear or circular interpolation.
	ORIGIN SEARCH	DATUM	Finds the machine origin according to input signals.
	INTERRUPT INCHING	MOVEI	Changes the position by inching according to input signals.
	MOVE TIME	MOVET	Positions according to a specified time.
	TRAVERSE	MOVETRAV	Executes a winding operation.
	INDEPENDENT ELECTRONIC CAM	CAM	Executes cam operations according to a table.
Starting and stopping axis operations	LINK	MOVELINK	Synchronizes with the main axis with acceleration and deceleration.
	SYNCHRONIZED ELECTRONIC CAM	CAMBOX	Executes a cam operation according to a table and main axis.
	ELECTRONIC SHAFT	CONNECT	Synchronizes at fixed rate to main axis.
	FOLLOW-UP SYNCHRONIZATION	SYNC	Follows and synchronizes with the main axis.
	STOP SYNCHRONIZATION	SYNCR	Stops MOVELINK, CAMBOX, CONNECT, and SYNC.
	ADD AXIS TRAVEL	ADDAX, ADDAXR	Starts and stops the accumulation of travel amounts between axes.
	START SPEED, END SPEED	SPEED, SPEEDR	Outputs and stops a speed reference.
	START TORQUE, END TORQUE	TORQUE, TORQUER	Outputs and stops a torque reference.
Settings	CHANGE TARGET	MOVEMODI	Changes the target position for the axis that is travelling.
	ABSOLUTE SPECIFICATION, INCREMENTAL SPECIFICATION	ABL, INC	Handles coordinates as absolute or incremental values.
	CHANGE PARAMETER	PARAM	Changes parameter values at one time.
	PASS MODE	PASSMODE	Specifies operations with interpolation blocks connected.
	STOP MODE	STOPMODE	Waits for the interpolation block to be in position.
	SELECT MACHINE COORDINATE SYSTEM, SELECT WORKPIECE COORDINATE SYSTEM	ORIGIN, WORK	Selects either the machine coordinate system or the workpiece coordinate system.
	CHANGE WORKPIECE ORIGIN OFFSET	OFFPOS	Changes the offset of the workpiece coordinate system.
	LATCH	LATCH	Latches the present position.
Controls	IGNORE SINGLE BLOCK	NSTOP	Ignores single block mode.
	PROGRAM START, PROGRAM END	PROG, END	Marks the beginning or end of a program.
	SUBPROGRAM CALL, SUBPROGRAM END	GOSUB, RETURN	Calls a subprogram or ends a subprogram and returns to the source of the call.
	DWELL, WAIT	DWELL, WAIT	Waits for a specified length of time or for a specified condition to be met and then executes the next block.
	OPTIONAL END	STOPOP	Stops the block being executed when a specified condition is met.
	Conditional Branching	IF, ELS, ENDIF	Branches according to conditions.
	WHILE Repeat Commands	WHILE, WEND	Repeats until any specified condition is met.
	FOR Repeat Commands	FOR, NEXT	Repeats until specified count (constant, variable, or immediate) is met.
Simple operations	Parallel Execution	PARALLEL, JOINT, JWAIT	Executes in parallel for the specified interval.
	Selected Execution	SWITCH, CASE, BREAK, DEFAULT, SEND	Switches and executes the specified section according to conditions.
	NO OPERATION SINGLE, NO OPERATION MULTIPLE	NOPS, NOPM	Nothing is executed. (Single or multiple execution command)
	SUBSTITUTION	=	Substitutes values for variables.
	Arithmetic Operations	+, -, *, / , ^	Performs addition, subtraction, multiplication, division, and power operations.
	REMAINDER	%	Finds the remainder in division operations.
	Logical operations	OR/XOR/AND/NOT	Performs logical OR, XOR, AND, and NOT operations.
	ABSOLUTE	ABS	Finds the absolute value.
Functions	SINE, COSINE, ASINE, ACOSINE	SIN, COS, ASIN, ACOS	Finds the sine, cosine, arcsine, or arccosine.
	TANGENT, ATANGENT	TAN, ATAN	Finds the tangent or arctangent.
	SQUARE ROOT, EXPONENT, LOGARITHM	SQR, EXP, LOG	Finds the square root, exponent, or logarithm.
	FRACTION	FRAC	Finds the decimal portion.
	SIGN	SGN	1 if greater than 0, and -1 if negative.
	BIT ON, BIT OFF	SET, RESET	Turns a specified bit ON or OFF.
Bit operations	RIGHT SHIFT, LEFT SHIFT	SFTR, SFTL	Shifts right or left for the specified number of bits.
	BCD → BIN/BIN → BCD	BIN, BCD	Converts from BCD to binary, or from binary to BCD.
Data operations	BLOCK TRANSFER, BLOCK CLEAR	XFER, CLEAR	Transfers or clears a block of data.

Concepts

New Product Information/
Motion Network Linear

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

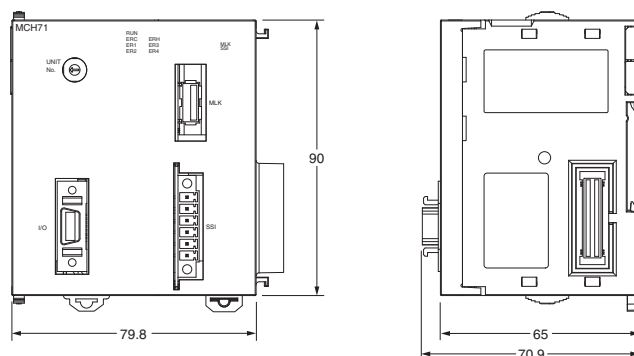
OMNUC W

SMARTSTEP
Junior

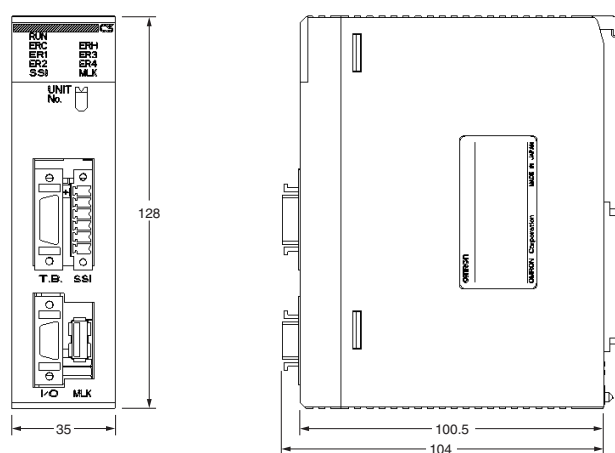
Dimensions

(Unit: mm)

CJ1W-MCH71



CS1W-MCH71



Related Manual

English Cat. No.	Japanese Cat. No.	Type	Name
W435	SBCE-327	CS1W-MCH71/CJ1W-MCH71	CS1W-MCH71/CJ1W-MCH71 CS/CJ-series MECHATROLINK-II-compatible Motion Control Unit User's Manual
W448	SBCE-336	CXONE-AL□□C/D-V3	CX-Motion-NCH Operation Manual
—	SBCE-046	CS1W-MCH71/CJ1W-MCH71	CS1W-MCH71/CJ1W-MCH71 Motion Control Unit (ONNUC W-series) Technical Guide

[illegible]

OMNUC G-series AC Servomotors/Servo Drives with Built-in MECHATROLINK-II Communications

R88M-G/R88D-GN□-ML2

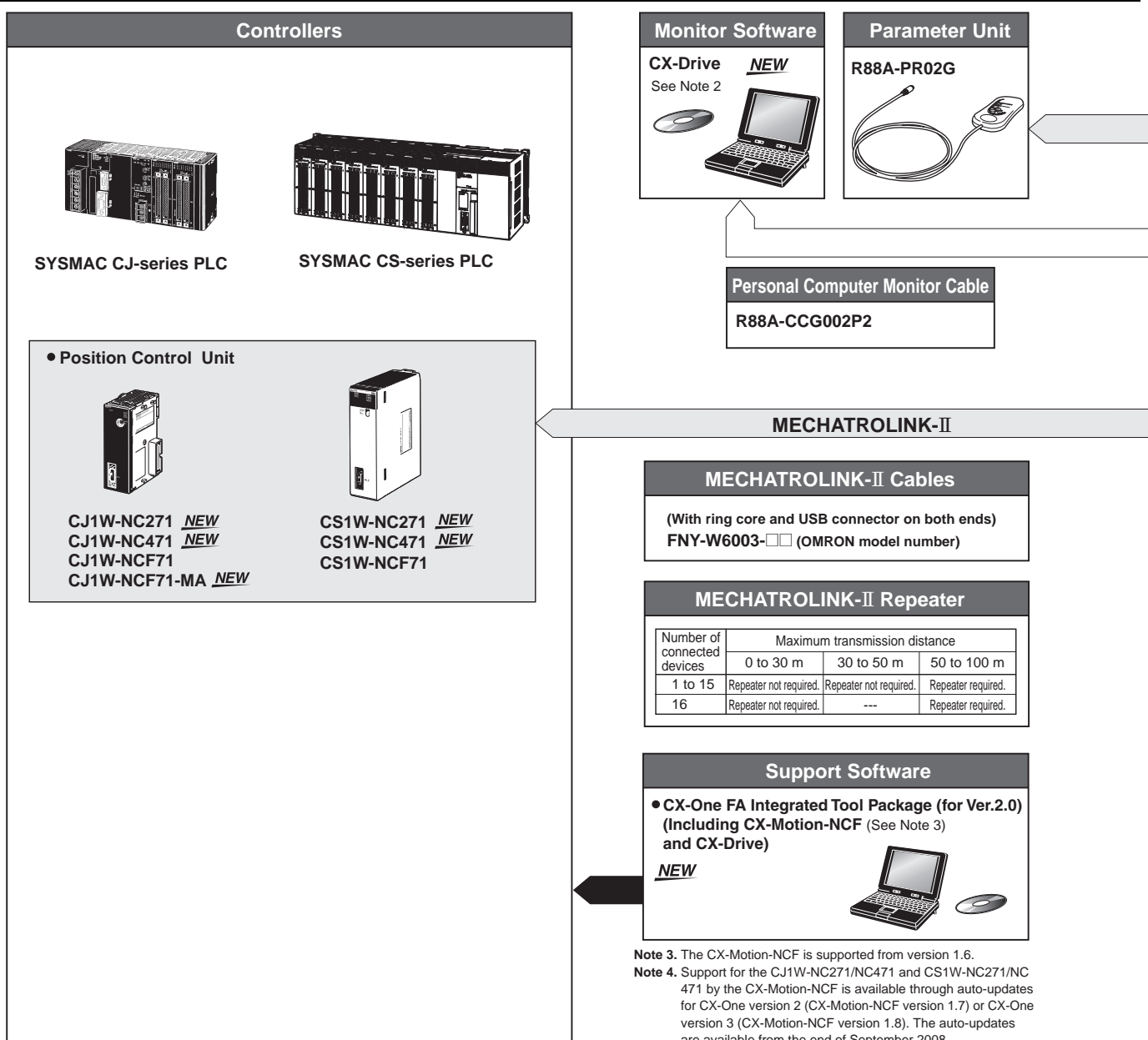
Saves Space and Enables MECHATROLINK-II Communications with the Controller.

- Data transfer using MECHATROLINK-II (See Note 1) Communications:
All control data that can be interfaced between the Servo Drive and the Controller is transmitted using data communications. This enables maximizing the Servomotor performance without restricting the transmission performance of the control signals.
- Having a communications module built into the Servo Drive significantly saves space in the control panel.

Note: 1. MECHATROLINK-II is a registered trademark of the MECHATROLINK Members Association.

Note: 2. CX-Drive (version 1.62) support for OMNUC G-series Servo Drives with MECHATROLINK-II Communications can be obtained by using the CX-One V2/V3 auto-update function from July 31, 2008.

System Configuration



Note 3. The CX-Motion-NCF is supported from version 1.6.

Note 4. Support for the CJ1W-NC271/NC471 and CS1W-NC271/NC471 by the CX-Motion-NCF is available through auto-updates for CX-One version 2 (CX-Motion-NCF version 1.7) or CX-One version 3 (CX-Motion-NCF version 1.8). The auto-updates are available from the end of September 2008.



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

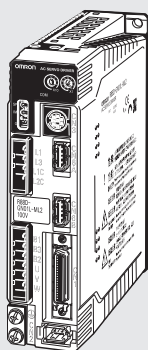
OMNUC G

OMNUC W

SMARTSTEP
Junior

AC Servo Drives

- OMNUC G-series
AC Servo Drive
R88D-GN□□-ML2

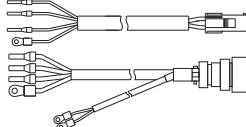


NEW

I/O signals

Power Cables

- Standard Cables
Without Brake
R88A-CAG□□□□S
With Brake
R88A-CAG□□□□B
- Robot Cable **NEW**
Without Brakes
R88A-CAG□□□□SR
With Brake
R88A-CAG□□□□BR

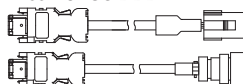


Motor power signals

feedback signals

Encoder Cables

- Standard Cables
50 W to 750 W
R88A-CRG□□□□C
900 W to 7.5 kW
R88A-CRGC□□□□N
- Robot Cables **NEW**
50 W to 750 W
R88A-CRG□□□□CR
900 W to 7.5 kW
R88A-CRGC□□□□NR



Absolute Encoder Battery Cable

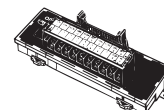
- R88A-CRGD0R3C (-BS) **NEW**
(One Battery is included with Servo Drivers
with model numbers ending in "BS.")



*Not required if a battery is connected to the control connector (CN1).

Connector-Terminal Block Conversion Units and Cable

- Connector-Terminal Block Conversion Unit
XW2□-20G□

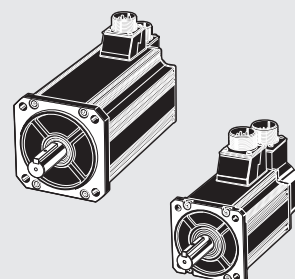


- Cable
XW2Z-□□□J-B33 **NEW**



AC Servomotors

- Model without Decelerators
R88M-G



Decelerators

- Backlash: 3 Arcminutes Max.
R88G-HPG
Backlash: 15 Arcminutes Max.
R88G-VRSF



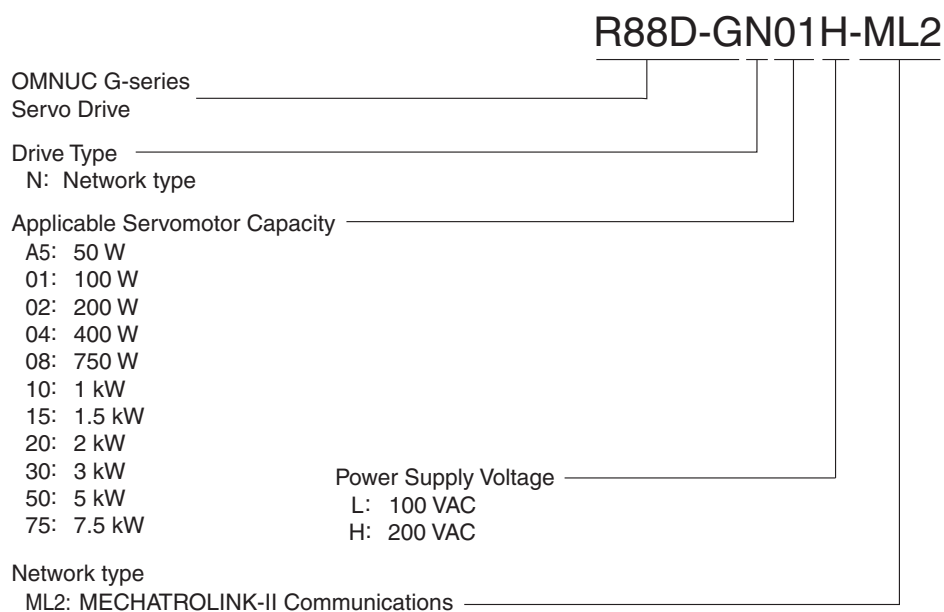
Peripheral Devices

- Reactors
3G3AX-DL
3G3AX-AL
- External Regeneration Resistors
R88A-RR

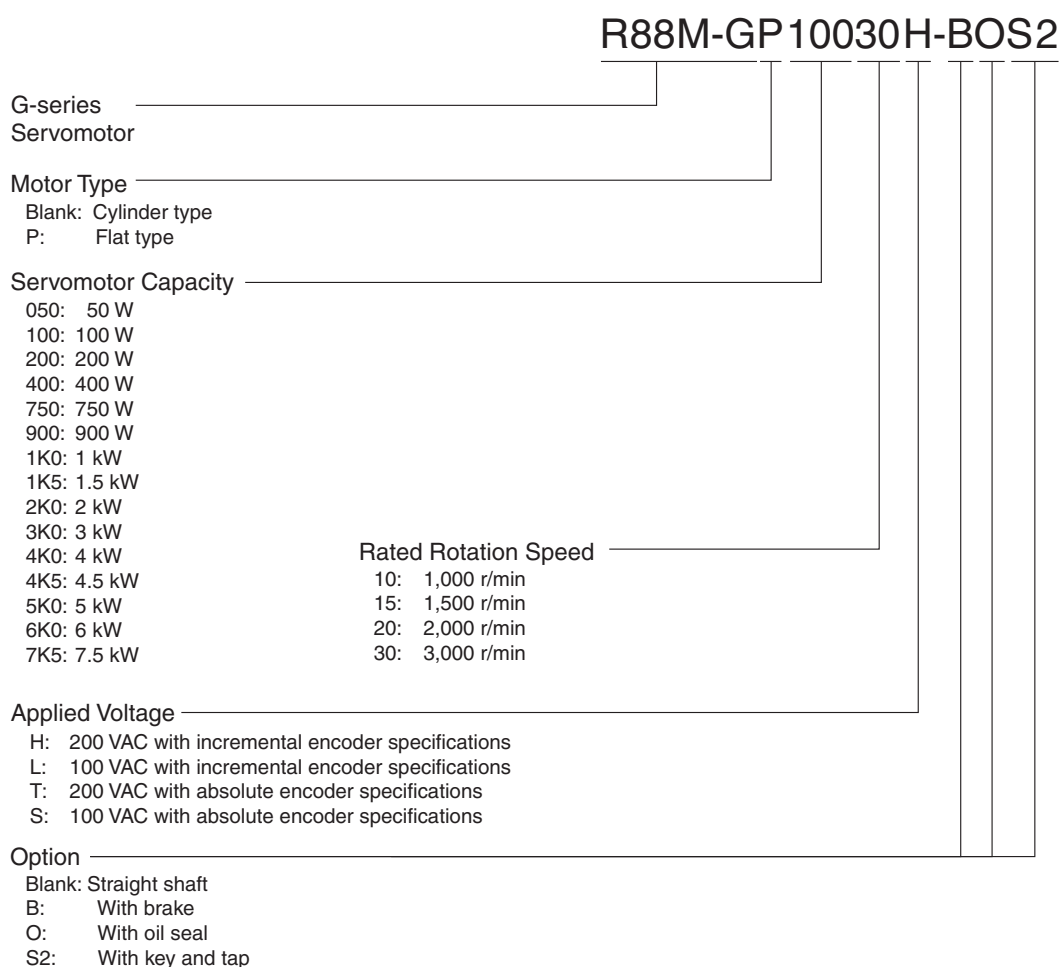
Interpreting Model Numbers

● Servo Drive Model Numbers

The model number provides information such as the Servo Drive type, the applicable Servomotor capacity, and the power supply voltage.



● Servomotor Model Numbers



● Understanding Decelerator Model Numbers

Backlash = 3' Max.

R88G-HPG14A05100PBJ

Decelerator for _____
G-Series Servomotors
Backlash = 3' Max.

Flange Size Number _____

11A :□40
14A :□60
20A :□90
32A :□120
50A :□170
65A :□230

Gear Ratio _____

05 :1/5
09 :1/9 (only frame number 11A)
11 :1/11 (except frame number 65A)
12 :1/12 (only frame number 65A)
20 :1/20 (only frame number 65A)
21 :1/21 (except frame number 65A)
25 :1/25 (only frame number 65A)
33 :1/33
45 :1/45

Applicable Servomotor Capacity _____

050 : 50 W
100 :100 W
200 :200 W
400 :400 W
750 :750 W
900 :900 W
1K0 :1 kW
1K5 :1.5 kW
2K0 :2 kW
3K0 :3 kW
4K0 :4 kW
4K5 :4.5 kW
5K0 :5 kW
6K0 :6 kW
7K5 :7 kW

Motor Type _____

Blank :3,000-r/min cylindrical servomotors
P :flat servomotors
S :2,000-r/min servomotors
T :1,000-r/min servomotors

Backlash _____

B :3' max.

Option _____

Blank :Straight shaft
J :With key and tap

Backlash = 15' Max.

R88G-VRSF09B100PCJ

Decelerator for _____
G-Series Servomotors
Backlash = 15' Max.

Gear Ratio _____

05 :1/5
09 :1/9
15 :1/15
25 :1/25

Flange Size Number _____

B :□52
C :□78
D :□98

Applicable Servomotor Capacity _____

050 : 50 W
100 :100 W
200 :200 W
400 :400 W
750 :750 W

Motor Type _____

Blank :3,000-r/min cylindrical servomotors
P :flat servomotors

Backlash _____

C :15' max.

Option _____

J :With key

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

Ordering Information

● Servo Drives ***NEW***

Specifications		Model
Single-phase 100 VAC	50 W	R88D-GNA5L-ML2
	100 W	R88D-GN01L-ML2
	200 W	R88D-GN02L-ML2
	400 W	R88D-GN04L-ML2
Single-phase 200 VAC	50 W	R88D-GN01H-ML2
	100 W	
	200 W	R88D-GN02H-ML2
	400 W	R88D-GN04H-ML2
Single-phase/three-phase 200 VAC	750 W	R88D-GN08H-ML2
	1 kW	R88D-GN10H-ML2
	900 W	R88D-GN15H-ML2
	1 kW	
Three-phase 200 VAC	1.5 kW	R88D-GN50H-ML2
	2 kW	
	2 kW	
	3 kW	
	3 kW	R88D-GN75H-ML2
	4 kW	
	4.5 kW	
	5 kW	
	6 kW	R88D-GN75H-ML2
	7.5 kW	

● Servomotors

INC 3,000-r/min Cylindrical Servomotors

Specifications			Model	
			Straight shaft	Straight shaft with key and tap
Without brake	100 V	50 W	R88M-G05030H	R88M-G05030H-S2
		100 W	R88M-G10030L	R88M-G10030L-S2
		200 W	R88M-G20030L	R88M-G20030L-S2
		400 W	R88M-G40030L	R88M-G40030L-S2
	200 V	50 W	R88M-G05030H	R88M-G05030H-S2
		100 W	R88M-G10030H	R88M-G10030H-S2
		200 W	R88M-G20030H	R88M-G20030H-S2
		400 W	R88M-G40030H	R88M-G40030H-S2
With brake	100 V	50 W	R88M-G05030H-B	R88M-G05030H-BS2
		100 W	R88M-G10030L-B	R88M-G10030L-BS2
		200 W	R88M-G20030L-B	R88M-G20030L-BS2
		400 W	R88M-G40030L-B	R88M-G40030L-BS2
	200 V	50 W	R88M-G05030H-B	R88M-G05030H-BS2
		100 W	R88M-G10030H-B	R88M-G10030H-BS2
		200 W	R88M-G20030H-B	R88M-G20030H-BS2
		400 W	R88M-G40030H-B	R88M-G40030H-BS2

Note: Models with oil seals are also available.

ABS/INC 3,000-r/min Cylindrical Servomotors

Specifications			Model	
			Straight shaft	Straight shaft with key and tap
Without brake	100 V	50 W	R88M-G05030T	R88M-G05030T-S2
		100 W	R88M-G10030S	R88M-G10030S-S2
		200 W	R88M-G20030S	R88M-G20030S-S2
		400 W	R88M-G40030S	R88M-G40030S-S2
	200 V	50 W	R88M-G05030T	R88M-G05030T-S2
		100 W	R88M-G10030T	R88M-G10030T-S2
		200 W	R88M-G20030T	R88M-G20030T-S2
		400 W	R88M-G40030T	R88M-G40030T-S2
		750 W	R88M-G75030T	R88M-G75030T-S2
		1 kW	R88M-G1K030T	R88M-G1K030T-S2
		1.5 kW	R88M-G1K530T	R88M-G1K530T-S2
		2 kW	R88M-G2K030T	R88M-G2K030T-S2
		3 kW	R88M-G3K030T	R88M-G3K030T-S2
		4 kW	R88M-G4K030T	R88M-G4K030T-S2
		5 kW	R88M-G5K030T	R88M-G5K030T-S2
With brake	100 V	50 W	R88M-G05030T-B	R88M-G05030T-BS2
		100 W	R88M-G10030S-B	R88M-G10030S-BS2
		200 W	R88M-G20030S-B	R88M-G20030S-BS2
		400 W	R88M-G40030S-B	R88M-G40030S-BS2
	200 V	50 W	R88M-G05030T-B	R88M-G05030T-BS2
		100 W	R88M-G10030T-B	R88M-G10030T-BS2
		200 W	R88M-G20030T-B	R88M-G20030T-BS2
		400 W	R88M-G40030T-B	R88M-G40030T-BS2
		750 W	R88M-G75030T-B	R88M-G75030T-BS2
		1 kW	R88M-G1K030T-B	R88M-G1K030T-BS2
		1.5 kW	R88M-G1K530T-B	R88M-G1K530T-BS2
		2 kW	R88M-G2K030T-B	R88M-G2K030T-BS2
		3 kW	R88M-G3K030T-B	R88M-G3K030T-BS2
		4 kW	R88M-G4K030T-B	R88M-G4K030T-BS2
		5 kW	R88M-G5K030T-B	R88M-G5K030T-BS2

Note: Models with oil seals are also available.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

INC 3,000-r/min Flat Servomotors

Specifications			Model	
			Straight shaft	Straight shaft with key and tap
Without brake	100 V	100 W	R88M-GP10030L	R88M-GP10030L-S2
		200 W	R88M-GP20030L	R88M-GP20030L-S2
		400 W	R88M-GP40030L	R88M-GP40030L-S2
	200 V	100 W	R88M-GP10030H	R88M-GP10030H-S2
		200 W	R88M-GP20030H	R88M-GP20030H-S2
		400 W	R88M-GP40030H	R88M-GP40030H-S2
With brake	100 V	100 W	R88M-GP10030L-B	R88M-GP10030L-BS2
		200 W	R88M-GP20030L-B	R88M-GP20030L-BS2
		400 W	R88M-GP40030L-B	R88M-GP40030L-BS2
	200 V	100 W	R88M-GP10030H-B	R88M-GP10030H-BS2
		200 W	R88M-GP20030H-B	R88M-GP20030H-BS2
		400 W	R88M-GP40030H-B	R88M-GP40030H-BS2

Note: Models with oil seals are also available.

ABS/INC 3,000-r/min Flat Servomotors

Specifications			Model	
			Straight shaft	Straight shaft with key and tap
Without brake	100 V	100 W	R88M-GP10030S	R88M-GP10030S-S2
		200 W	R88M-GP20030S	R88M-GP20030S-S2
		400 W	R88M-GP40030S	R88M-GP40030S-S2
	200 V	100 W	R88M-GP10030T	R88M-GP10030T-S2
		200 W	R88M-GP20030T	R88M-GP20030T-S2
		400 W	R88M-GP40030T	R88M-GP40030T-S2
With brake	100 V	100 W	R88M-GP10030S-B	R88M-GP10030S-BS2
		200 W	R88M-GP20030S-B	R88M-GP20030S-BS2
		400 W	R88M-GP40030S-B	R88M-GP40030S-BS2
	200 V	100 W	R88M-GP10030T-B	R88M-GP10030T-BS2
		200 W	R88M-GP20030T-B	R88M-GP20030T-BS2
		400 W	R88M-GP40030T-B	R88M-GP40030T-BS2

Note: Models with oil seals are also available.

ABS/INC 2,000-r/min Cylindrical Servomotors

Specifications			Model	
			Straight shaft	Straight shaft with key and tap
Without brake	200 V	1 kW	R88M-G1K020T	R88M-G1K020T-S2
		1.5 kW	R88M-G1K520T	R88M-G1K520T-S2
		2 kW	R88M-G2K020T	R88M-G2K020T-S2
		3 kW	R88M-G3K020T	R88M-G3K020T-S2
		4 kW	R88M-G4K020T	R88M-G4K020T-S2
		5 kW	R88M-G5K020T	R88M-G5K020T-S2
		7.5 kW	R88M-G7K515T	R88M-G7K515T-S2
With brake	200 V	1 kW	R88M-G1K020T-B	R88M-G1K020T-BS2
		1.5 kW	R88M-G1K520T-B	R88M-G1K520T-BS2
		2 kW	R88M-G2K020T-B	R88M-G2K020T-BS2
		3 kW	R88M-G3K020T-B	R88M-G3K020T-BS2
		4 kW	R88M-G4K020T-B	R88M-G4K020T-BS2
		5 kW	R88M-G5K020T-B	R88M-G5K020T-BS2
		7.5 kW *	R88M-G7K515T-B	R88M-G7K515T-BS2

Note: 1. Models with oil seals are also available.

Note: 2. The rated rotation speed for 7.5-kW Servomotors is 1,500 r/min.

* UL:pending

ABS/INC 1,000-r/min Cylindrical Servomotors

Specifications			Model	
			Straight shaft	Straight shaft with key and tap
Without brake	200 V	900 W	R88M-G90010T	R88M-G90010T-S2
		2 kW	R88M-G2K010T	R88M-G2K010T-S2
		3 kW	R88M-G3K010T	R88M-G3K010T-S2
		4.5 kW	R88M-G4K510T	R88M-G4K510T-S2
		6 kW	R88M-G6K010T	R88M-G6K010T-S2
With brake	200 V	900 W	R88M-G90010T-B	R88M-G90010T-BS2
		2 kW	R88M-G2K010T-B	R88M-G2K010T-BS2
		3 kW	R88M-G3K010T-B	R88M-G3K010T-BS2
		4.5 kW	R88M-G4K510T-B	R88M-G4K510T-BS2
		6 kW *	R88M-G6K010T-B	R88M-G6K010T-BS2

Note: Models with oil seals are also available.

* UL: pending

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

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Decelerators

Backlash: 3 Arcminutes Max.

Decelerators for 3,000-r/min Cylindrical Servomotors
Straight shaft

Specifications		Model
Motor capacity	Gear ratio	
50 W	1/5	R88G-HPG11A05100B
	1/9	R88G-HPG11A09050B
	1/21	R88G-HPG14A21100B
	1/33	R88G-HPG14A33050B
	1/45	R88G-HPG14A45050B
100 W	1/5	R88G-HPG11A05100B
	1/11	R88G-HPG14A11100B
	1/21	R88G-HPG14A21100B
	1/33	R88G-HPG20A33100B
	1/45	R88G-HPG20A45100B
200 W	1/5	R88G-HPG14A05200B
	1/11	R88G-HPG14A11200B
	1/21	R88G-HPG20A21200B
	1/33	R88G-HPG20A33200B
	1/45	R88G-HPG20A45200B
400 W	1/5	R88G-HPG14A05400B
	1/11	R88G-HPG20A11400B
	1/21	R88G-HPG20A21400B
	1/33	R88G-HPG32A33400B
	1/45	R88G-HPG32A45400B
750 W	1/5	R88G-HPG20A05750B
	1/11	R88G-HPG20A11750B
	1/21	R88G-HPG32A21750B
	1/33	R88G-HPG32A33750B
	1/45	R88G-HPG32A45750B
1 kW	1/5	R88G-HPG32A051K0B <i>NEW</i>
	1/11	R88G-HPG32A111K0B <i>NEW</i>
	1/21	R88G-HPG32A211K0B <i>NEW</i>
	1/33	R88G-HPG32A331K0B <i>NEW</i>
	1/45	R88G-HPG50A451K0B <i>NEW</i>
1.5 kW	1/5	R88G-HPG32A052K0B <i>NEW</i>
	1/11	R88G-HPG32A112K0B <i>NEW</i>
	1/21	R88G-HPG32A211K5B <i>NEW</i>
	1/33	R88G-HPG50A332K0B <i>NEW</i>
	1/45	R88G-HPG50A451K5B <i>NEW</i>
2 kW	1/5	R88G-HPG32A052K0B <i>NEW</i>
	1/11	R88G-HPG32A112K0B <i>NEW</i>
	1/21	R88G-HPG50A212K0B <i>NEW</i>
	1/33	R88G-HPG50A332K0B <i>NEW</i>
3 kW	1/5	R88G-HPG32A053K0B <i>NEW</i>
	1/11	R88G-HPG50A113K0B <i>NEW</i>
	1/21	R88G-HPG50A213K0B <i>NEW</i>
4 kW	1/5	R88G-HPG32A054K0B <i>NEW</i>
	1/11	R88G-HPG50A115K0B <i>NEW</i>
5 kW	1/5	R88G-HPG50A055K0B <i>NEW</i>
	1/11	R88G-HPG50A115K0B <i>NEW</i>

Note: 1. The standard models have a straight shaft.

Note: 2. To order a Servomotor with a straight shaft with key, add "J" to the end of the model number.

Backlash: 3 Arcminutes Max.

Decelerators for 3,000-r/min Flat Servomotors
Straight shaft

Specifications		Model
Motor capacity	Gear ratio	
100 W	1/5	R88G-HPG11A05100PB
	1/11	R88G-HPG14A11100PB
	1/21	R88G-HPG14A21100PB
	1/33	R88G-HPG20A33100PB
	1/45	R88G-HPG20A45100PB
200 W	1/5	R88G-HPG14A05200PB
	1/11	R88G-HPG20A11200PB
	1/21	R88G-HPG20A21200PB
	1/33	R88G-HPG20A33200PB
	1/45	R88G-HPG20A45200PB
400 W	1/5	R88G-HPG20A05400PB
	1/11	R88G-HPG20A11400PB
	1/21	R88G-HPG20A21400PB
	1/33	R88G-HPG32A33400PB
	1/45	R88G-HPG32A45400PB

Note: 1. The standard models have a straight shaft.

Note: 2. To order a Servomotor with a straight shaft with key, add "J" to the end of the model number.

Backlash: 3 Arcminutes Max. *NEW***Decelerators for 2,000-r/min Cylindrical Servomotors
Straight shaft**

Specifications		Model
Motor capacity	Gear ratio	
1 kW	1/5	R88G-HPG32A053K0B
	1/11	R88G-HPG32A112K0SB
	1/21	R88G-HPG32A211K0SB
	1/33	R88G-HPG50A332K0SB
	1/45	R88G-HPG50A451K0SB
1.5 kW	1/5	R88G-HPG32A053K0B
	1/11	R88G-HPG32A112K0SB
	1/21	R88G-HPG50A213K0B
	1/33	R88G-HPG50A332K0SB
2 kW	1/5	R88G-HPG32A053K0B
	1/11	R88G-HPG32A112K0SB
	1/21	R88G-HPG50A213K0B
	1/33	R88G-HPG50A332K0SB
3 kW	1/5	R88G-HPG32A054K0B
	1/11	R88G-HPG50A115K0B
	1/21	R88G-HPG50A213K0SB
	1/25	R88G-HPG65A253K0SB
4 kW	1/5	R88G-HPG50A054K0SB
	1/11	R88G-HPG50A114K0SB
	1/20	R88G-HPG65A204K0SB
	1/25	R88G-HPG65A254K0SB
5 kW	1/5	R88G-HPG50A055K0SB
	1/11	R88G-HPG50A115K0SB
	1/20	R88G-HPG65A205K0SB
	1/25	R88G-HPG65A255K0SB
7.5 kW	1/5	R88G-HPG65A057K5SB
	1/12	R88G-HPG65A127K5SB

Note: 1. The standard models have a straight shaft.**Note:** 2. To order a Servomotor with a straight shaft with key, add "J" to the end of the model number.**Backlash: 15 Arcminutes Max.****Decelerators for 3,000-r/min Cylindrical Servomotors
Straight shaft with key**

Specifications		Model
Motor capacity	Gear ratio	
50 W	1/5	R88G-VRSF05B100CJ
	1/9	R88G-VRSF09B100CJ
	1/15	R88G-VRSF15B100CJ
	1/25	R88G-VRSF25B100CJ
100 W	1/5	R88G-VRSF05B100CJ
	1/9	R88G-VRSF09B100CJ
	1/15	R88G-VRSF15B100CJ
	1/25	R88G-VRSF25B100CJ
200 W	1/5	R88G-VRSF05B200CJ
	1/9	R88G-VRSF09C200CJ
	1/15	R88G-VRSF15C200CJ
	1/25	R88G-VRSF25C200CJ
400 W	1/5	R88G-VRSF05C400CJ
	1/9	R88G-VRSF09C400CJ
	1/15	R88G-VRSF15C400CJ
	1/25	R88G-VRSF25C400CJ
750 W	1/5	R88G-VRSF05C750CJ
	1/9	R88G-VRSF09D750CJ
	1/15	R88G-VRSF15D750CJ
	1/25	R88G-VRSF25D750CJ

Backlash: 3 Arcminutes Max. *NEW***Decelerators for 1,000-r/min Cylindrical Servomotors
Straight shaft**

Specifications		Model
Motor capacity	Gear ratio	
900 W	1/5	R88G-HPG32A05900TB
	1/11	R88G-HPG32A11900TB
	1/21	R88G-HPG50A21900TB
	1/33	R88G-HPG50A33900TB
2 kW	1/5	R88G-HPG32A052K0TB
	1/11	R88G-HPG50A112K0TB
	1/21	R88G-HPG50A212K0TB
	1/25	R88G-HPG65A255K0SB
3 kW	1/5	R88G-HPG50A055K0SB
	1/11	R88G-HPG50A115K0SB
	1/20	R88G-HPG65A205K0SB
	1/25	R88G-HPG65A255K0SB
4.5 kW	1/5	R88G-HPG50A054K5TB
	1/12	R88G-HPG65A127K5SB
	1/20	R88G-HPG65A204K5TB
6 kW	1/5	R88G-HPG65A057K5SB
	1/12	R88G-HPG65A127K5SB

Note: 1. The standard models have a straight shaft.**Note:** 2. Models with a key and tap are indicated with "J" at the end of the model number.**Backlash: 15 Arcminutes Max.****Decelerators for 3,000-r/min Flat Servomotors
Straight shaft with key**

Specifications		Model
Motor capacity	Gear ratio	
100 W	1/5	R88G-VRSF05B100PCJ
	1/9	R88G-VRSF09B100PCJ
	1/15	R88G-VRSF15B100PCJ
	1/25	R88G-VRSF25B100PCJ
200 W	1/5	R88G-VRSF05B200PCJ
	1/9	R88G-VRSF09C200PCJ
	1/15	R88G-VRSF15C200PCJ
	1/25	R88G-VRSF25C200PCJ
400 W	1/5	R88G-VRSF05C400PCJ
	1/9	R88G-VRSF09C400PCJ
	1/15	R88G-VRSF15C400PCJ
	1/25	R88G-VRSF25C400PCJ

Concepts

New Product Information/
Motion Network LineupController
FeaturesServo System
FeaturesCX-Drive/
Motor Selection ProgramServomotors, and
Servo Drives
Selection GuideControllers
Position Control UnitsControllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

● Accessories and Cables

● Servomotor Power Cables (Standard Cables) For Servomotor without brake

Specifications	Model
3,000-r/min Servomotors of 50 to 750 W, 3,000-r/min Flat Servomotors of 100 to 400 W	3 m R88A-CAGA003S
	5 m R88A-CAGA005S
	10 m R88A-CAGA010S
	15 m R88A-CAGA015S
	20 m R88A-CAGA020S
	30 m R88A-CAGA030S
	40 m R88A-CAGA040S
	50 m R88A-CAGA050S
3,000-r/min Servomotors of 1 to 1.5 kW, 2,000-r/min Servomotors of 1 to 1.5 kW, 1,000-r/min Servomotors of 900 W	3 m R88A-CAGB003S
	5 m R88A-CAGB005S
	10 m R88A-CAGB010S
	15 m R88A-CAGB015S
	20 m R88A-CAGB020S
	30 m R88A-CAGB030S
	40 m R88A-CAGB040S
	50 m R88A-CAGB050S
3,000-r/min Servomotors of 2 kW, 2,000-r/min Servomotors of 2 kW	3 m R88A-CAGC003S
	5 m R88A-CAGC005S
	10 m R88A-CAGC010S
	15 m R88A-CAGC015S
	20 m R88A-CAGC020S
	30 m R88A-CAGC030S
	40 m R88A-CAGC040S
	50 m R88A-CAGC050S
3,000-r/min Servomotors of 3 to 5 kW, 2,000-r/min Servomotors of 3 to 5 kW, 1,000-r/min Servomotors of 2 to 4.5 kW	3 m R88A-CAGD003S
	5 m R88A-CAGD005S
	10 m R88A-CAGD010S
	15 m R88A-CAGD015S
	20 m R88A-CAGD020S
	30 m R88A-CAGD030S
	40 m R88A-CAGD040S
	50 m R88A-CAGD050S
2,000-r/min Servomotors of 7.5 kW, 1,000-r/min Servomotors of 6 kW	3 m R88A-CAGE003S
	5 m R88A-CAGE005S
	10 m R88A-CAGE010S
	15 m R88A-CAGE015S
	20 m R88A-CAGE020S
	30 m R88A-CAGE030S
	40 m R88A-CAGE040S
	50 m R88A-CAGE050S

Note: There are separate connectors for power and brakes for 3,000-r/min Servomotors of 50 to 750 W, Flat Servomotors, and Servomotors of 6 kW or higher. When a Servomotor with a brake is used, it is necessary to use both a Power Cable for Servomotors without brakes and a Power Cable.

● Servomotor Power Cables (Standard Cables) For Servomotor with brake

Specifications	Model
3,000-r/min Servomotors of 1 to 1.5 kW, 2,000-r/min Servomotors of 1 to 1.5 kW, 1,000-r/min Servomotors of 900 W	3 m R88A-CAGB003B
	5 m R88A-CAGB005B
	10 m R88A-CAGB010B
	15 m R88A-CAGB015B
	20 m R88A-CAGB020B
	30 m R88A-CAGB030B
	40 m R88A-CAGB040B
	50 m R88A-CAGB050B
3,000-r/min Servomotors of 2 kW, 2,000-r/min Servomotors of 2 kW	3 m R88A-CAGC003B
	5 m R88A-CAGC005B
	10 m R88A-CAGC010B
	15 m R88A-CAGC015B
	20 m R88A-CAGC020B
	30 m R88A-CAGC030B
	40 m R88A-CAGC040B
	50 m R88A-CAGC050B
3,000-r/min Servomotors of 3 to 5 kW, 2,000-r/min Servomotors of 3 to 5 kW, 1,000-r/min Servomotors of 2 to 4.5 kW	3 m R88A-CAGD003B
	5 m R88A-CAGD005B
	10 m R88A-CAGD010B
	15 m R88A-CAGD015B
	20 m R88A-CAGD020B
	30 m R88A-CAGD030B
	40 m R88A-CAGD040B
	50 m R88A-CAGD050B

● Brake Cables (Standard Cables)

Specifications	Model
3,000-r/min Servomotors of 50 to 750 W, 3,000-r/min Flat Servomotors of 100 to 400 W	3 m R88A-CAGA003B
	5 m R88A-CAGA005B
	10 m R88A-CAGA010B
	15 m R88A-CAGA015B
	20 m R88A-CAGA020B
	30 m R88A-CAGA030B
	40 m R88A-CAGA040B
	50 m R88A-CAGA050B
1,500-r/min Servomotors of 7.5 kW, 1,000-r/min Servomotors of 6 kW	3 m R88A-CAGE003B
	5 m R88A-CAGE005B
	10 m R88A-CAGE010B
	15 m R88A-CAGE015B
	20 m R88A-CAGE020B
	30 m R88A-CAGE030B
	40 m R88A-CAGE040B
	50 m R88A-CAGE050B

• Encoder Cables (Standard Cables)

Specifications		Model
3,000-r/min Servomotors of 50 to 750 W with an absolute encoder, 3,000-r/min Flat Servomotors of 100 to 400 W with an absolute encoder	3 m	R88A-CRGA003C
	5 m	R88A-CRGA005C
	10 m	R88A-CRGA010C
	15 m	R88A-CRGA015C
	20 m	R88A-CRGA020C
	30 m	R88A-CRGA030C
	40 m	R88A-CRGA040C
	50 m	R88A-CRGA050C
3,000-r/min Servomotors of 50 to 750 W with an incremental encoder, 3,000-r/min Flat Servomotors of 100 to 400 W with an incremental encoder	3 m	R88A-CRGB003C
	5 m	R88A-CRGB005C
	10 m	R88A-CRGB010C
	15 m	R88A-CRGB015C
	20 m	R88A-CRGB020C
	30 m	R88A-CRGB030C
	40 m	R88A-CRGB040C
	50 m	R88A-CRGB050C
3,000-r/min Servomotors of 1 to 5 kW, 2,000-r/min Servomotors of 1 to 5 kW, 1,500-r/min Servomotors of 7.5 kW, 1,000-r/min Servomotors of 900 W to 6 kW	3 m	R88A-CRGC003N
	5 m	R88A-CRGC005N
	10 m	R88A-CRGC010N
	15 m	R88A-CRGC015N
	20 m	R88A-CRGC020N
	30 m	R88A-CRGC030N
	40 m	R88A-CRGC040N
	50 m	R88A-CRGC050N

• Absolute Encoder Battery Cable **NEW**

Specifications		Model
Absolute Encoder Battery Cable (Battery not included.)	0.3 m	R88A-CRGD0R3C
Absolute Encoder Battery Cable (One R88A-BAT01G Battery included.)	0.3 m	R88A-CRGD0R3C-BS

• Absolute Encoder Backup Battery

Specifications	Model
2,000 mA·h 3.6 V	R88A-BAT01G

• Servomotor Power Cables (Robot Cables) **NEW**
For Servomotor without brake

Specifications		Model
3,000-r/min Servomotors of 50 to 750 W, 3,000-r/min Flat Servomotors of 100 to 400 W	3 m	R88A-CAGA003SR
	5 m	R88A-CAGA005SR
	10 m	R88A-CAGA010SR
	15 m	R88A-CAGA015SR
	20 m	R88A-CAGA020SR
	30 m	R88A-CAGA030SR
	40 m	R88A-CAGA040SR
	50 m	R88A-CAGA050SR
3,000-r/min Servomotors of 1 to 1.5 kW, 2,000-r/min Servomotors of 1 to 1.5 kW, 1,000-r/min Servomotors of 900 W	3 m	R88A-CAGB003SR
	5 m	R88A-CAGB005SR
	10 m	R88A-CAGB010SR
	15 m	R88A-CAGB015SR
	20 m	R88A-CAGB020SR
	30 m	R88A-CAGB030SR
	40 m	R88A-CAGB040SR
	50 m	R88A-CAGB050SR
3,000-r/min Servomotors of 2 kW, 2,000-r/min Servomotors of 2 kW	3 m	R88A-CAGC003SR
	5 m	R88A-CAGC005SR
	10 m	R88A-CAGC010SR
	15 m	R88A-CAGC015SR
	20 m	R88A-CAGC020SR
	30 m	R88A-CAGC030SR
	40 m	R88A-CAGC040SR
	50 m	R88A-CAGC050SR
3,000-r/min Servomotors of 3 to 5 kW, 2,000-r/min Servomotors of 3 to 5 kW, 1,000-r/min Servomotors of 2 to 4.5 kW	3 m	R88A-CAGD003SR
	5 m	R88A-CAGD005SR
	10 m	R88A-CAGD010SR
	15 m	R88A-CAGD015SR
	20 m	R88A-CAGD020SR
	30 m	R88A-CAGD030SR
	40 m	R88A-CAGD040SR
	50 m	R88A-CAGD050SR

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

• Servomotor Power Cables (Robot Cables) **NEW**
For Servomotor with brake

Specifications	Model
3,000-r/min Servomotors of 1 to 1.5 kW, 2,000-r/min Servomotors of 1 to 1.5 kW, 1,000-r/min Servomotors of 900 W	3 m R88A-CAGB003BR
	5 m R88A-CAGB005BR
	10 m R88A-CAGB010BR
	15 m R88A-CAGB015BR
	20 m R88A-CAGB020BR
	30 m R88A-CAGB030BR
	40 m R88A-CAGB040BR
	50 m R88A-CAGB050BR
3,000-r/min Servomotors of 2 kW, 2,000-r/min Servomotors of 2 kW	3 m R88A-CAGC003BR
	5 m R88A-CAGC005BR
	10 m R88A-CAGC010BR
	15 m R88A-CAGC015BR
	20 m R88A-CAGC020BR
	30 m R88A-CAGC030BR
	40 m R88A-CAGC040BR
	50 m R88A-CAGC050BR
3,000-r/min Servomotors of 3 to 5 kW, 2,000-r/min Servomotors of 3 to 5 kW, 1,000-r/min Servomotors of 2 to 4.5 kW	3 m R88A-CAGD003BR
	5 m R88A-CAGD005BR
	10 m R88A-CAGD010BR
	15 m R88A-CAGD015BR
	20 m R88A-CAGD020BR
	30 m R88A-CAGD030BR
	40 m R88A-CAGD040BR
	50 m R88A-CAGD050BR

• Brake Cables (Robot Cables) **NEW**

Specifications	Model
3,000-r/min Servomotors of 50 to 750 W, 3,000-r/min Flat Servomotors of 100 to 400 W	3 m R88A-CAGA003BR
	5 m R88A-CAGA005BR
	10 m R88A-CAGA010BR
	15 m R88A-CAGA015BR
	20 m R88A-CAGA020BR
	30 m R88A-CAGA030BR
	40 m R88A-CAGA040BR
	50 m R88A-CAGA050BR

• Encoder Cables (Robot Cables) **NEW**

Specifications	Model
3,000-r/min Servomotors of 50 to 750 W with an absolute encoder, 3,000-r/min Flat Servomotors of 100 to 400 W with an absolute encoder	3 m R88A-CRGA003CR
	5 m R88A-CRGA005CR
	10 m R88A-CRGA010CR
	15 m R88A-CRGA015CR
	20 m R88A-CRGA020CR
	30 m R88A-CRGA030CR
	40 m R88A-CRGA040CR
	50 m R88A-CRGA050CR
3,000-r/min Servomotors of 50 to 750 W with an incremental encoder, 3,000-r/min Flat Servomotors of 100 to 400 W with an incremental encoder	3 m R88A-CRGB003CR
	5 m R88A-CRGB005CR
	10 m R88A-CRGB010CR
	15 m R88A-CRGB015CR
	20 m R88A-CRGB020CR
	30 m R88A-CRGB030CR
	40 m R88A-CRGB040CR
	50 m R88A-CRGB050CR
3,000-r/min Servomotors of 1 to 5 kW, 2,000-r/min Servomotors of 1 to 5 kW, 1,500-r/min Servomotors of 7.5 kW, 1,000-r/min Servomotors of 900 W to 6 kW	3 m R88A-CRGC003NR
	5 m R88A-CRGC005NR
	10 m R88A-CRGC010NR
	15 m R88A-CRGC015NR
	20 m R88A-CRGC020NR
	30 m R88A-CRGC030NR
	40 m R88A-CRGC040NR
	50 m R88A-CRGC050NR

• Communications Cables

Specifications	Model
RS-232 Communications Cable (Personal Computer Monitor Cable)	2 m R88A-CCG002P2

• Connectors

Specifications	Model
Servomotor Connector for Encoder Cable	Absolute Encoder R88A-CNG01R
	Incremental Encoder R88A-CNG02R
Control I/O Connector (CN1)	R88A-CNU01C
Encoder Connector (CN2)	R88A-CNW01R
Power Cable Connector (750 W max.)	R88A-CNG01A NEW
Brake Cable Connector (750 W max.)	R88A-CNG01B NEW

• Control Cables

Specifications	Model
Connector Terminal Block Cables	1 m XW2Z-100J-B33 NEW
	2 m XW2Z-200J-B33 NEW
Connector Terminal Block	M3 screw type XW2B-20G4
	M3.5 screw type XW2B-20G5
	M3 screw type XW2D-20G6

• External Regeneration Resistors

Specifications	Model
20 W, 50 Ω	R88A-RR08050S
20 W, 100 Ω	R88A-RR080100S
70 W, 47 Ω	R88A-RR22047S
500 W, 20 Ω	R88A-RR50020S <i>NEW</i>

• Reactors

Specifications	Model
R88D-GNA5L-ML2/-GN01H-ML2	3G3AX-DL2002
R88D-GN01L-ML2/-GN02H-ML2	3G3AX-DL2004
R88D-GN02L-ML2/-GN04H-ML2	3G3AX-DL2007
R88D-GN04L-ML2/-GN08H-ML2/-GT10H-ML2	3G3AX-DL2015
R88D-GN15H-ML2	3G3AX-DL2022
R88D-GN08H-ML2/-GN10H-ML2/-GN15H-ML2	3G3AX-AL2025
R88D-GN20H-ML2/-GN30H-ML2	3G3AX-AL2055
R88D-GN50H-ML2	3G3AX-AL2110
R88D-GN75H-ML2	3G3AX-AL2220

• Mounting Brackets (L Brackets for Rack Mounting)

Specifications	Model
R88D-GNA5L-ML2/-GN01L-ML2/-GN01H-ML2/-GN02H-ML2	R88A-TK01G
R88D-GN02L-ML2/-GN04H-ML2	R88A-TK02G
R88D-GN04L-ML2/-GN08H-ML2	R88A-TK03G
R88D-GN10H-ML2/-GN15H-ML2	R88A-TK04G

• Parameter Unit

Specifications	Model
Parameter Unit	R88A-PR02G

• MECHATROLINK-related Devices and Cables (Manufactured by Yaskawa Corporation)

Name		OMRON model number	Yaskawa model number
MECHATROLINK-II Cables (with ring core and USB connector on both ends)	Cable Length: 0.5 m	FNY-W6003-A5	JEPMC-W6003-A5
	Cable Length: 1.0 m	FNY-W6003-01	JEPMC-W6003-01
	Cable Length: 3.0 m	FNY-W6003-03	JEPMC-W6003-03
	Cable Length: 5.0 m	FNY-W6003-05	JEPMC-W6003-05
	Cable Length: 10.0 m	FNY-W6003-10	JEPMC-W6003-10
	Cable Length: 20.0 m	FNY-W6003-20	JEPMC-W6003-20
	Cable Length: 30.0 m	FNY-W6003-30	JEPMC-W6003-30
MECHATROLINK-II Terminating Resistor	Terminating resistance	FNY-W6022	JEPMC-W6022
MECHATROLINK-II Repeater	Communications Repeater	FNY-REP2000	JEPMC-REP2000

Note: MECHATROLINK-related Devices and Cables are manufactured by Yaskawa Corporation, but they can be ordered directly from OMRON using the OMRON model numbers. (Yaskawa-brand products will be delivered even when they are ordered from OMRON.)

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

Servo Drive-Servomotor Combinations

Only the Servomotor and Servo Drive combinations listed here can be used. Do not use other combinations.

● 3,000-r/min Cylindrical Servomotors and Servo Drives

Voltage	Servo Drive	Servomotor		
		Rated output	With incremental encoder	With absolute encoder
100 V	R88D-GNA5L-ML2	50 W	R88M-G05030H-□	R88M-G05030T-□
	R88D-GN01L-ML2	100 W	R88M-G10030L-□	R88M-G10030S-□
	R88D-GN02L-ML2	200 W	R88M-G20030L-□	R88M-G20030S-□
	R88D-GN04L-ML2	400 W	R88M-G40030L-□	R88M-G40030S-□
Single-phase 200 V	R88D-GN01H-ML2	50 W	R88M-G05030H-□	R88M-G05030T-□
	R88D-GN01H-ML2	100 W	R88M-G10030H-□	R88M-G10030T-□
	R88D-GN02H-ML2	200 W	R88M-G20030H-□	R88M-G20030T-□
	R88D-GN04H-ML2	400 W	R88M-G40030H-□	R88M-G40030T-□
Single-phase/ three-phase 200 V	R88D-GN08H-ML2	750 W	R88M-G75030H-□	R88M-G75030T-□
	R88D-GN15H-ML2	1 kW	—	R88M-G1K030T-□
	R88D-GN15H-ML2	1.5 kW	—	R88M-G1K530T-□
	R88D-GN20H-ML2	2 kW	—	R88M-G2K030T-□
Three-phase 200 V	R88D-GN30H-ML2	3 kW	—	R88M-G3K030T-□
	R88D-GN50H-ML2	4 kW	—	R88M-G4K030T-□
	R88D-GN50H-ML2	5 kW	—	R88M-G5K030T-□
	R88D-GN50H-ML2	5 kW	—	R88M-G5K030T-□

● 3,000-r/min Flat Servomotors and Servo Drives

Voltage	Servo Drive	Servomotor		
		Rated output	With incremental encoder	With absolute encoder
100 V	R88D-GN01L-ML2	100 W	R88M-GP10030L-□	R88M-GP10030S-□
	R88D-GN02L-ML2	200 W	R88M-GP20030L-□	R88M-GP20030S-□
	R88D-GN04L-ML2	400 W	R88M-GP40030L-□	R88M-GP40030S-□
Single-phase 200 V	R88D-GN01H-ML2	100 W	R88M-GP10030H-□	R88M-GP10030T-□
	R88D-GN02H-ML2	200 W	R88M-GP20030H-□	R88M-GP20030T-□
	R88D-GN04H-ML2	400 W	R88M-GP40030H-□	R88M-GP40030T-□

● 2,000-r/min Cylindrical Servomotors and Servo Drives

Voltage	Servo Drive	Servomotor	
		Rated output	With absolute encoder
Single-phase/ three-phase 200 V	R88D-GN10H-ML2	1 kW	R88M-G1K020T-□
	R88D-GN15H-ML2	1.5 kW	R88M-G1K520T-□
Three-phase 200 V	R88D-GN20H-ML2	2 kW	R88M-G2K020T-□
	R88D-GN30H-ML2	3 kW	R88M-G3K020T-□
	R88D-GN50H-ML2	4 kW	R88M-G4K020T-□
	R88D-GN50H-ML2	5 kW	R88M-G5K020T-□
	R88D-GN75H-ML2	7.5 kW	R88M-G7K515T-□

● 1,000-r/min Cylindrical Servomotors and Servo Drives

Voltage	Servo Drive	Servomotor	
		Rated output	With absolute encoder
Single-phase/ three-phase 200 V	R88D-GN15H-ML2	900 W	R88M-G90010T-□
Three-phase 200 V	R88D-GN30H-ML2	2 kW	R88M-G2K010T-□
	R88D-GN50H-ML2	3 kW	R88M-G3K010T-□
	R88D-GN50H-ML2	4.5 kW	R88M-G4K510T-□
	R88D-GN75H-ML2	6 kW	R88M-G6K010T-□

Servomotor and Decelerator Combinations

● 3,000-r/min Cylindrical Servomotors

Motor model	1/5	1/11 (1/9 for flange size No.11)	1/21	1/33	1/45
R88M-G05030□	R88G-HPG11A05100B□ (Also used with R88M-G10030□)	R88G-HPG11A09050B□ (Gear ratio 1/9)	R88G-HPG14A21100B□ (Also used with R88M-G10030□)	R88G-HPG14A33050B□	R88G-HPG14A45050B□
R88M-G10030□	R88G-HPG11A05100B□	R88G-HPG14A11100B□	R88G-HPG14A21100B□	R88G-HPG20A33100B□	R88G-HPG20A45100B□
R88M-G20030□	R88G-HPG14A05200B□	R88G-HPG14A11200B□	R88G-HPG20A21200B□	R88G-HPG20A33200B□	R88G-HPG20A45200B□
R88M-G40030□	R88G-HPG14A05400B□	R88G-HPG20A11400B□	R88G-HPG20A21400B□	R88G-HPG32A33400B□	R88G-HPG32A45400B□
R88M-G75030□	R88G-HPG20A05750B□	R88G-HPG20A11750B□	R88G-HPG32A21750B□	R88G-HPG32A33750B□	R88G-HPG32A45750B□
R88M-G1K030T	R88G-HPG32A051K0B□	R88G-HPG32A111K0B□	R88G-HPG32A211K0B□	R88G-HPG32A331K0B□	R88G-HPG50A451K0B□
R88M-G1K530T	R88G-HPG32A052K0B□ (Also used with R88M-G2K030T)	R88G-HPG32A112K0B□ (Also used with R88M-G2K030T)	R88G-HPG32A211K5B□	R88G-HPG50A332K0B□ (Also used with R88M-G2K030T)	R88G-HPG50A451K5B□
R88M-G2K030T	R88G-HPG32A052K0B□	R88G-HPG32A112K0B□	R88G-HPG50A212K0B□	R88G-HPG50A332K0B□	—
R88M-G3K030T	R88G-HPG32A053K0B□	R88G-HPG50A113K0B□	R88G-HPG50A213K0B□	—	—
R88M-G4K030T	R88G-HPG32A054K0B□	R88G-HPG50A115K0B□ (Also used with R88M-G5K030T)	—	—	—
R88M-G5K030T	R88G-HPG50A055K0B□	R88G-HPG50A115K0B□	—	—	—

● 3,000-r/min Flat Servomotors

Motor model	1/5	1/11	1/21	1/33	1/45
R88M-GP10030□	R88G-HPG11A05100PB□	R88G-HPG14A11100PB□	R88G-HPG14A21100PB□	R88G-HPG20A33100PB□	R88G-HPG20A45100PB□
R88M-GP20030□	R88G-HPG14A05200PB□	R88G-HPG20A11200PB□	R88G-HPG20A21200PB□	R88G-HPG20A33200PB□	R88G-HPG20A45200PB□
R88M-GP40030□	R88G-HPG20A05400PB□	R88G-HPG20A11400PB□	R88G-HPG20A21400PB□	R88G-HPG32A33400PB□	R88G-HPG32A45400PB□

● 2,000-r/min Cylindrical Servomotors

Motor model	1/5	1/11 (1/12 for flange size No.65)	1/21 (1/20 for flange size No.65)	1/33 (1/25 for flange size No.65)	1/45
R88M-G1K020T	R88G-HPG32A053K0B□ (Also used with R88M-G3K030T)	R88G-HPG32A112K0SB□ (Also used with R88M-G2K020T)	R88G-HPG32A211K0SB□	R88G-HPG50A332K0SB□ (Also used with R88M-G2K020T)	R88G-HPG50A451K0SB□
R88M-G1K520T	R88G-HPG32A053K0B□ (Also used with R88M-G3K030T)	R88G-HPG32A112K0SB□ (Also used with R88M-G2K020T)	R88G-HPG50A213K0B□ (Also used with R88M-G3K030T)	R88G-HPG50A332K0SB□ (Also used with R88M-G2K020T)	—
R88M-G2K020T	R88G-HPG32A053K0B□ (Also used with R88M-G3K030T)	R88G-HPG32A112K0SB□	R88G-HPG50A213K0B□ (Also used with R88M-G3K030T)	R88G-HPG50A332K0SB□	—
R88M-G3K020T	R88G-HPG32A054K0B□ (Also used with R88M-G4K030T)	R88G-HPG50A115K0B□ (Also used with R88M-G5K030T)	R88G-HPG50A213K0SB□	R88G-HPG65A253K0SB□	—
R88M-G4K020T	R88G-HPG50A054K0SB□	R88G-HPG50A114K0SB□	R88G-HPG65A204K0SB□	R88G-HPG65A254K0SB□	—
R88M-G5K020T	R88G-HPG50A055K0SB□	R88G-HPG50A115K0SB□	R88G-HPG65A205K0SB□	R88G-HPG65A255K0SB□	—
R88M-G7K515T	R88G-HPG65A057K5SB□	R88G-HPG65A127K5SB□	—	—	—

● 1,000-r/min Cylindrical Servomotors

Motor model	1/5	1/11 (1/12 for flange size No.65)	1/21 (1/20 for flange size No.65)	1/33 (1/25 for flange size No.65)
R88M-G90010T	R88G-HPG32A05900TB□	R88G-HPG32A11900TB□	R88G-HPG50A21900TB□	R88G-HPG50A33900TB□
R88M-G2K010T	R88G-HPG32A052K0TB□	R88G-HPG50A112K0TB□	R88G-HPG50A212K0TB□	R88G-HPG65A255K0SB□ (Also used with R88M-G5K020T)
R88M-G3K010T	R88G-HPG50A055K0SB□ (Also used with R88M-G5K020T)	R88G-HPG50A115K0SB□ (Also used with R88M-G5K020T)	R88G-HPG65A205K0SB□ (Also used with R88M-G5K020T)	R88G-HPG65A255K0SB□ (Also used with R88M-G5K020T)
R88M-G4K510T	R88G-HPG50A054K5TB□	R88G-HPG65A127K5SB□ (Also used with R88M-G7K515T)	R88G-HPG65A204K5TB□	—
R88M-G6K010T	R88G-HPG65A057K5SB□ (Also used with R88M-G7K515T)	R88G-HPG65A127K5SB□ (Also used with R88M-G7K515T)	—	—

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

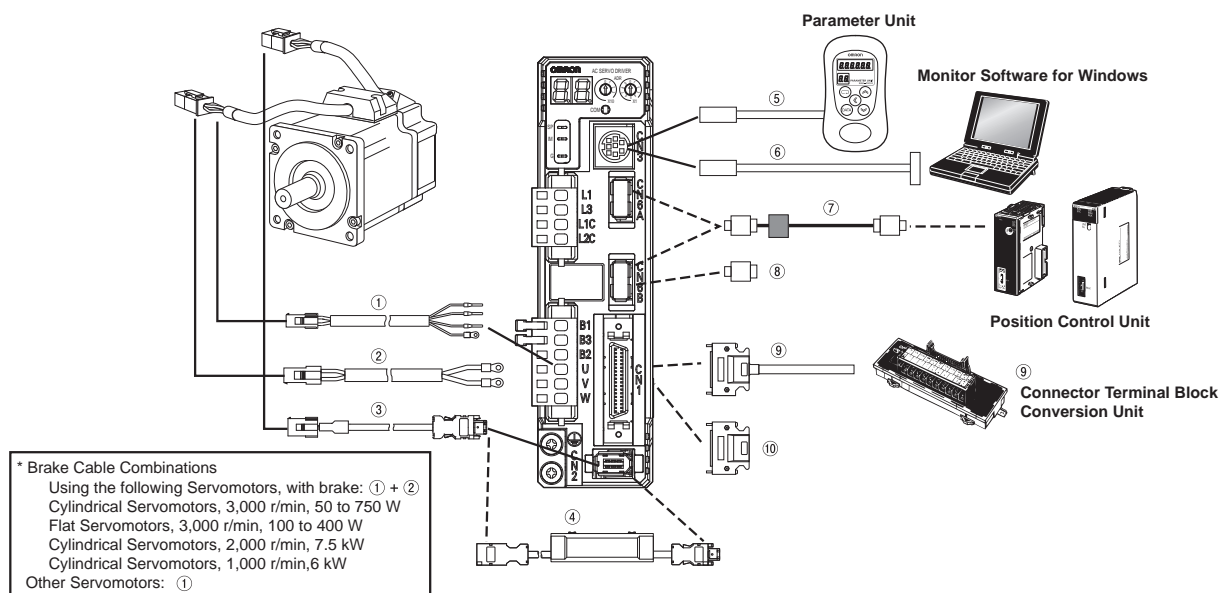
Controllers
Motion Control Units

OMNUC G

OMNUC W

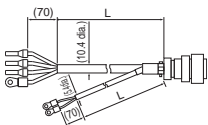
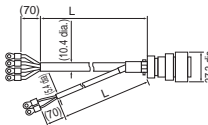
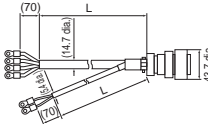
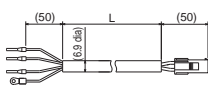
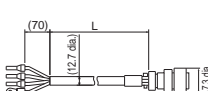
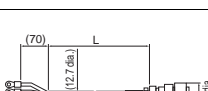
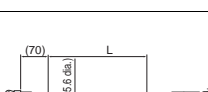
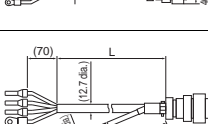
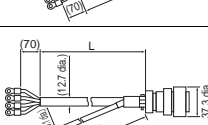
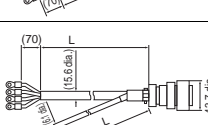
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Cable Combinations



Power Supply Cables (for CNB) (SR Connection Cables)

Symbol	Name	Connected to	Model	Description
①	Standard Servomotor Power Cables for Servomotors without Brakes	Cylindrical Servomotors, 3,000 r/min, 50 to 750 W Flat Servomotors, 3,000 r/min, 100 to 400 W	R88A-CAGA□□□S The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Connector: 172159-1 (Tyco Electronics AMP KK) Connector pins: 170362-1 (Tyco Electronics AMP KK), 170366-1 (Tyco Electronics AMP KK)
		Cylindrical Servomotors, 3,000 r/min, 1 to 1.5 kW Cylindrical Servomotors, 2,000 r/min, 1 to 1.5 kW Cylindrical Servomotors, 1,000 r/min, 900 W	R88A-CAGB□□□S The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-4S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
		Cylindrical Servomotors, 3,000 r/min, 2 kW Cylindrical Servomotors, 2,000 r/min, 2 kW	R88A-CAGC□□□S The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-4S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
		Cylindrical Servomotors, 3,000 r/min, 3 to 5 kW Cylindrical Servomotors, 2,000 r/min, 3 to 5 kW Cylindrical Servomotors, 1,000 r/min, 2 to 4.5 kW	R88A-CAGD□□□S The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B22-22S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
		Cylindrical Servomotors, 1,500 r/min, 7.5 kW Cylindrical Servomotors, 1,000 r/min, 6 kW	R88A-CAGE□□□S The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B32-17S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-20A (Japan Aviation Electronics Industry, Ltd.)

Symbol	Name	Connected to	Model	Description
①	Standard Servomotor Power Cables for Servomotors with Brakes	Cylindrical Servomotors, 3,000 r/min, 1 to 1.5 kW Cylindrical Servomotors, 2,000 r/min, 1 to 1.5 kW Cylindrical Servomotors, 1,000 r/min, 900 W	R88A-CAGB□□□B The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-18S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
		Cylindrical Servomotors, 3,000 r/min, 2 kW Cylindrical Servomotors, 2,000 r/min, 2 kW	R88A-CAGC□□□B The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-18S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
		Cylindrical Servomotors, 3,000 r/min, 3 to 5 kW Cylindrical Servomotors, 2,000 r/min, 3 to 5 kW Cylindrical Servomotors, 1,000 r/min, 2 to 4.5 kW	R88A-CAGD□□□B The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B24-11S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-16A (Japan Aviation Electronics Industry, Ltd.)
	Robot Servomotor Power Cables for Servomotors without Brakes	Cylindrical Servomotors, 3,000 r/min, 50 to 750 W Flat Servomotors, 3,000 r/min, 100 to 400 W	R88A-CAGA□□□SR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Connector: 172159-1 (Tyco Electronics AMP KK) Connector pins: 170362-1 (Tyco Electronics AMP KK) 170366-1 (Tyco Electronics AMP KK)
		Cylindrical Servomotors, 3,000 r/min, 1 to 1.5 kW Cylindrical Servomotors, 2,000 r/min, 1 to 1.5 kW Cylindrical Servomotors, 1,000 r/min, 900 W	R88A-CAGB□□□SR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-4S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
		Cylindrical Servomotors, 3,000 r/min, 2 kW Cylindrical Servomotors, 2,000 r/min, 2 kW	R88A-CAGC□□□SR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-4S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
		Cylindrical Servomotors, 3,000 r/min, 3 to 5 kW Cylindrical Servomotors, 2,000 r/min, 3 to 5 kW Cylindrical Servomotors, 1,000 r/min, 2 to 4.5 kW	R88A-CAGD□□□SR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B22-22S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
	Robot Servomotor Power Cables for Servomotors with Brakes	Cylindrical Servomotors, 3,000 r/min, 1 to 1.5 kW Cylindrical Servomotors, 2,000 r/min, 1 to 1.5 kW Cylindrical Servomotors, 1,000 r/min, 900 W	R88A-CAGB□□□BR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-18S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
		Cylindrical Servomotors, 3,000 r/min, 2 kW Cylindrical Servomotors, 2,000 r/min, 2 kW	R88A-CAGC□□□BR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B20-18S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)
		Cylindrical Servomotors, 3,000 r/min, 3 to 5 kW Cylindrical Servomotors, 2,000 r/min, 3 to 5 kW Cylindrical Servomotors, 1,000 r/min, 2 to 4.5 kW	R88A-CAGD□□□BR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 [Servomotor Connector] Straight plug: N/MS3106B24-11S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-16A (Japan Aviation Electronics Industry, Ltd.)

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units


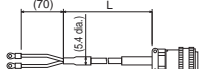

Controllers
Motion Control Units

OMNUC G

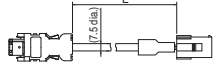

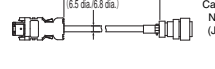
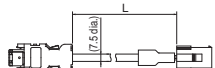
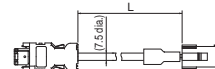
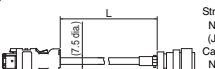
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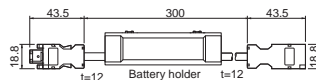
● Brake Cables

Symbol	Name	Connected to	Model	Description
②	Standard Brake Cables	Cylindrical Servomotors, 3,000 r/min, 50 to 750 W Flat Servomotors, 3,000 r/min, 100 to 400 W	R88A-CAGA□□□B The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 <p>[Servomotor Connector] Connector: 172157-1 (Tyco Electronics AMP KK) Connector pins: 170362-1 (Tyco Electronics AMP KK) 170366-1 (Tyco Electronics AMP KK)</p>
		Cylindrical Servomotors, 1,500 r/min, 7.5 kW Cylindrical Servomotors, 1,000 r/min, 6 kW	R88A-CAGE□□□B The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 <p>[Servomotor Connector] Straight plug: N/MS3106B14-2S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-6A (Japan Aviation Electronics Industry, Ltd.)</p>
	Robot Brake Cables	Cylindrical Servomotors, 3,000 r/min, 50 to 750 W Flat Servomotors, 3,000 r/min, 100 to 400 W	R88A-CAGA□□□BR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	 <p>[Servomotor Connector] Connector: 172157-1 (Tyco Electronics AMP KK) Connector pins: 170362-1 (Tyco Electronics AMP KK) 170366-1 (Tyco Electronics AMP KK)</p>

● Encoder Cables (for CN2)

Symbol	Name	Connected to	Model	Description
③	Standard Encoder Cables with Connectors	Cylindrical Servomotors, 3,000 r/min, 50 to 750 W, absolute encoder Flat Servomotors, 3,000 r/min, 100 to 400 W, absolute encoder	R88A-CRGA□□□C The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	<p>[Servo Drive Connector] Connector: 3 to 20 m: Crimped I/O connector: (Molex Japan Co., Ltd.) 30 to 50 m: 55100-0670 (Molex Japan Co., Ltd.) Connector pins: 50639-8028 (Molex Japan Co., Ltd.)</p>  <p>[Servomotor Connector] Connector: 172161-1 (Tyco Electronics AMP KK) Connector pins: 170365-1 (Tyco Electronics AMP KK) 171639-1 (Tyco Electronics AMP KK)</p>
		Cylindrical Servomotors, 3,000 r/min, 50 to 750 W, incremental encoder Flat Servomotors, 3,000 r/min, 100 to 400 W, incremental encoder	R88A-CRGB□□□C The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	<p>[Servo Drive Connector] Connector: 3 to 20 m: Crimped I/O connector: (Molex Japan Co., Ltd.) 30 to 50 m: 55100-0670 (Molex Japan Co., Ltd.) Connector pins: 50639-8028 (Molex Japan Co., Ltd.)</p>  <p>[Servomotor Connector] Connector: 172160-1 (Tyco Electronics AMP KK) Connector pins: 170365-1 (Tyco Electronics AMP KK) 171639-1 (Tyco Electronics AMP KK)</p>
		Cylindrical Servomotors, 3,000 r/min, 1 to 1.5 kW Cylindrical Servomotors, 2,000 r/min, 1 to 5 kW Cylindrical Servomotors, 1,500 r/min, 7.5 kW Cylindrical Servomotors, 1,000 r/min, 900 W to 6 kW	R88A-CRGC□□□N The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	<p>[Servo Drive Connector] Connector: 3 to 20 m: Crimped I/O connector: (Molex Japan Co., Ltd.) 30 to 50 m: 55100-0670 (Molex Japan Co., Ltd.) Connector pins: 50639-8028 (Molex Japan Co., Ltd.)</p>  <p>[Servomotor Connector] Straight plug: N/MS3106B20-29S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)</p>
	Robot Encoder Cables with Connectors	Cylindrical Servomotors, 3,000 r/min, 50 to 750 W, absolute encoder Flat Servomotors, 3,000 r/min, 100 to 400 W, absolute encoder	R88A-CRGA□□□CR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	<p>[Servo Drive Connector] Connector: 3 to 20 m: Crimped I/O connector: (Molex Japan Co., Ltd.) 30 to 50 m: 55100-0670 (Molex Japan Co., Ltd.) Connector pins: 50639-8028 (Molex Japan Co., Ltd.)</p>  <p>[Servomotor Connector] Connector: 172161-1 (Tyco Electronics AMP KK) Connector pins: 170365-1 (Tyco Electronics AMP KK)</p>
		Cylindrical Servomotors, 3,000 r/min, 50 to 750 W, incremental encoder Flat Servomotors, 3,000 r/min, 100 to 400 W, incremental encoder	R88A-CRGB□□□CR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	<p>[Servo Drive Connector] Connector: 3 to 20 m: Crimped I/O connector: (Molex Japan Co., Ltd.) 30 to 50 m: 55100-0670 (Molex Japan Co., Ltd.) Connector pins: 50639-8028 (Molex Japan Co., Ltd.)</p>  <p>[Servomotor Connector] Connector: 172160-1 (Tyco Electronics AMP KK) Connector pins: 170365-1 (Tyco Electronics AMP KK)</p>
		Cylindrical Servomotors, 3,000 r/min, 1 to 1.5 kW Cylindrical Servomotors, 2,000 r/min, 1 to 5 kW Cylindrical Servomotors, 1,500 r/min, 7.5 kW Cylindrical Servomotors, 1,000 r/min, 900 W to 6 kW	R88A-CRGC□□□NR The empty boxes in the model number are for the cable length. The cable can be 3, 5, 10, 15, 20, 30, 40, or 50 m long.	<p>[Servo Drive Connector] Connector: 3 to 20 m: Crimped I/O connector: (Molex Japan Co., Ltd.) 30 to 50 m: 55100-0670 (Molex Japan Co., Ltd.) Connector pins: 50639-8028 (Molex Japan Co., Ltd.)</p>  <p>[Servomotor Connector] Straight plug: N/MS3106B20-29S (Japan Aviation Electronics Industry, Ltd.) Cable clamp: N/MS3057-12A (Japan Aviation Electronics Industry, Ltd.)</p>

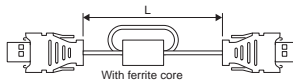
● Absolute Encoder Backup Battery and Absolute Encoder Battery Cable

Symbol	Name	Contents	Length (m)	Model	Description
④	Absolute Encoder Battery Cable	Battery not included.	0.3 m	R88A-CRGD0R3C	
		One R88A-BAT01G Battery included.	0.3 m	R88A-CRGD0R3C-BS	
	Absolute Encoder Backup Battery	—	—	R88A-BAT01G	—

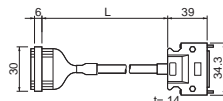
● RS-232 Communications Connector (for CN3)

Symbol	Name	Contents	Length (m)	Model
⑤	Parameter Unit	—	1.5 m	R88A-PR02G
⑥	Personal Computer Monitor Cable	for Windows RS232 Communications	2 m	R88A-CCG002P2

● MECHATROLINK-II Cable (for CN6)

Symbol	Name	Length (m)	OMRON model Number	Yasukawa model Number	Description
⑦	MECHATROLINK-II Cable	0.5 m	FNW-W6003-A5	JEPMC-W6003-A5	
		1.0 m	FNW-W6003-01	JEPMC-W6003-01	
		3.0 m	FNW-W6003-03	JEPMC-W6003-03	
		5.0 m	FNW-W6003-05	JEPMC-W6003-05	
		10 m	FNW-W6003-10	JEPMC-W6003-10	
		20 m	FNW-W6003-20	JEPMC-W6003-20	
		30 m	FNW-W6003-30	JEPMC-W6003-30	
⑧	MECHATROLINK-II Termination resistor	—	FNW-W6022	JEPMC-W6022	—

● Control Cables (for CN1)

Symbol	Name	Connected to	Model	Description
⑨	Connector Terminal Block Cables	—	XW2Z-□□□J-B33 The empty boxes in the model number are for the cable length. The cable can be 1, or 2 m long.	
	Connector Terminal Block Conversion Unit	M3 screw type	XW2B-20G4	—
		M3.5 screw type	XW2B-20G5	
		M3 screw type	XW2D-20G6	

● Control Cables

Symbol	Name	Connected to	Model
—	Servomotor Connector for Encoder Cable, absolute Encoder	for motor	R88A-CNG01R
—	Servomotor Connector for Encoder Cable, Incremental Encoder	for motor	R88A-CNG02R
⑩	Control I/O Connector (CN1)	for drive	R88A-CNU01C
—	Encoder Connector (CN2)	—	R88A-CNW01R
—	Power Cable Connector (750 W max.)	—	R88A-CNG01A
—	Brake Cable Connector (750 W max.)	—	R88A-CNG01B

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

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Servo Drive Specifications (R88D-GN□-ML2)

● General Specifications

Item			Specifications
Ambient operating temperature and humidity			0 to 55°C, 90% RH max. (with no condensation)
Ambient storage temperature and humidity			-20 to 65°C, 90% RH max. (with no condensation)
Operating and storage atmosphere			No corrosive gases
Vibration resistance			Smaller of either 10 to 60 Hz with double amplitude of 0.1 mm or acceleration of 5.88 m/s ² max. in X, Y, and Z directions.
Impact resistance			Acceleration of 19.6m/s ² max. 2 times each in X, Y, and Z directions
Insulation resistance			Between power supply/power line terminals and frame ground: 0.5 MΩ min. (at 500 VDC)
Dielectric strength			Between power supply/power line terminals and frame ground: 1,500 VAC for 1 min at 50/60 Hz Between each control signal and frame ground: 500 VAC for 1 min
Protective structure			Built into panel (IP10).
International standards	EC Directives	EMC Directive	EN 55011 Class A Group 1 EN 61000-6-2, IEC 61000-4-2/-3/-4/-5/-6/-11
		Low Voltage Directive	EN 50178
	UL standards		UL 508C
	CSA standards		CSA 22.2 No.14

Note: 1. The above items reflect individual evaluation testing. The results may differ under compound conditions.

Note: 2. Never perform withstand-voltage or other megameter tests on the Servo Drive. Doing so may damage the internal elements.

Note: 3. Depending on the operating conditions, some Servo Drive parts will require maintenance.

Note: 4. The service life of the Servo Drive is 28,000 hours at an average ambient temperature of 55°C at 100% of the rated torque.

● Characteristics

Servo Drives with 100-VAC Input Power

Item			R88D-GNA5L-ML2	R88D-GN01L-ML2	R88D-GN02L-ML2	R88D-GN04L-ML2
Continuous output current (rms)			1.3 A	1.8 A	2.4 A	4.9 A
Momentary maximum output current (rms)			3.9 A	5.4 A	7.2 A	14.7 A
Input power supply	Main circuit	Power supply capacity	0.4 KVA	0.4 KVA	0.5 KVA	0.9 KVA
		Power supply voltage	Single-phase 100 to 115 VAC (85 to 127 V), 50/60 Hz			
		Rated current	1.4 A	2.2 A	3.7 A	6.6 A
	Control circuit	Power supply voltage	Single-phase 100 to 115 VAC (85 to 127 V), 50/60 Hz			
		Rated current	0.09 A	0.09 A	0.09 A	0.09 A
Heat generated	Main circuit		10.1 W	14.4 W	18.4 W	41.4 W
	Control circuit		4.4 W	4.4 W	4.4 W	4.4 W
Control method			All-digital servo			
Inverter method			IGBT-driven PWM method			
PWM frequency			12.0 kHz		6.0 kHz	
Weight			Approx. 0.8 kg	Approx. 0.8 kg	Approx. 1.1 kg	Approx. 1.5 kg
Maximum applicable motor capacity			50 W	100 W	200 W	400 W
Applicable Servomotors	3,000-r/min Servomotors	INC	G05030H	G10030L	G20030L	G40030L
		ABS	G05030T	G10030S	G20030S	G40030S
	3,000-r/min Flat Servomotors	INC	—	GP10030L	GP20030L	GP40030L
		ABS	—	GP10030S	GP20030S	GP40030S
	2,000-r/min Servomotors	ABS	—	—	—	—
	1,000-r/min Servomotors	ABS	—	—	—	—
Performance	Speed control range		1:5000			
	Speed variability: Load characteristic		0.01% or less at 0% to 100% (at rated speed)			
	Speed variability: Voltage characteristic		0% at ±10% of rated voltage (at rated speed)			
	Speed variability: Temperature characteristic		±0.1% or less at 0 to 50°C (at rated speed)			
	Torque control reproducibility		±3% (at 20% to 100% of rated torque)			

Servo Drives with Single-phase 200-VAC Input Power

Item			R88D-GN01H-ML2	R88D-GN02H-ML2	R88D-GN04H-ML2	R88D-GN08H-ML2	R88D-GN10H-ML2	R88D-GN15H-ML2
Continuous output current (rms)			1.16 A	1.6 A	2.7 A	4.0 A	5.9 A	9.8 A
Momentary maximum output current (rms)			3.5 A	5.3 A	7.1 A	14.1 A	21.2 A	28.3 A
Input power supply	Main circuit	Power supply capacity	0.5 KVA	0.5 KVA	0.9 KVA	1.3 KVA	1.8 KVA	2.3 KVA
		Power supply voltage	Single-phase 200 to 240 VAC (170 to 264 V), 50/60 Hz			Single-phase or Three-phase 200 to 240 VAC (170 to 264 V), 50/60 Hz		
		Rated current	1.3 A	2.0 A	3.7 A	5.0/3.3*A	7.5/4.1*A	11/8.0*A
	Control circuit	Power supply voltage	Single-phase 200 to 240 VAC (170 to 264 V), 50/60 Hz					
		Rated current	0.05 A	0.05 A	0.05 A	0.05 A	0.07 A	0.07 A
Heat generated	Main circuit		14.3 W	14.8 W	23.6 W	38.7 W	52.9 W	105.9 W
	Control circuit		4.5 W	4.5 W	4.5 W	4.3 W	6.1 W	6.1 W
PWM frequency			12.0 kHz			6.0 kHz		
Weight			Approx. 0.8 kg	Approx. 0.8 kg	Approx. 1.1 kg	Approx. 1.5 kg	Approx. 1.7 kg	Approx. 1.7 kg
Maximum applicable motor capacity			100 W	200 W	400 W	750 W	1 kW	1.5 kW
Applicable Servomotors	3,000-r/min Servomotors	INC	G05030H G10030H	G20030H	G40030H	G75030H	—	—
		ABS	G05030T G10030T	G20030T	G40030T	G75030T	—	G1K030T G1K530T
	3,000-r/min Flat Servomotors	INC	GP10030H	GP20030H	GP40030H	—	—	—
		ABS	GP10030T	GP20030T	GP40030T	—	—	—
	2,000-r/min Servomotors	ABS	—	—	—	—	G1K020T	G1K520T
	1,000-r/min Servomotors	ABS	—	—	—	—	—	G90010T
Control method			All-digital servo					
Inverter method			IGBT-driven PWM method					
Performance	Speed control range		1:5000					
	Speed variability: Load characteristic		0.01% or less at 0% to 100% (at rated speed)					
	Speed variability: Voltage characteristic		0% at ±10% of rated voltage (at rated speed)					
	Speed variability: Temperature characteristic		±0.1% or less at 0 to 50°C (at rated speed)					
	Torque control reproducibility		±3% (at 20% to 100% of rated torque)					

*1. The left value is for single-phase input power and the right value is for three-phase input power.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

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Servo Drives with Three-phase 200-VAC Input Power

Item			R88D-GN20H-ML2	R88D-GN30H-ML2	R88D-GN50H-ML2	R88D-GN75H-ML2
Continuous output current (rms)			14.3 A	17.4 A	31.0 A	45.4 A
Momentary maximum output current (rms)			45.3 A	63.6 A	84.8 A	170.0 A
Input power supply	Main circuit	Power supply capacity	3.3 KVA	4.5 KVA	7.5 KVA	11 KVA
		Power supply voltage	Three-phase 200 to 230 VAC (170 to 253 V), 50/60 Hz			
		Rated current	10.2 A	15.2 A	23.7 A	35.0 A
	Control circuit	Power supply voltage	Single-phase 200 to 230 VAC (170 to 253 V), 50/60 Hz			
		Rated current	0.1 A	0.12 A	0.12 A	0.14 A
Heat generated	Main circuit		112.3 W	219.6 W	391.7 W	376.2 W
	Control circuit		10.7 W	13.3 W	13.3 W	13.8 W
PWM frequency			6.0 kHz			
Weight			Approx. 3.2 kg	Approx. 6.0 kg	Approx. 6.0 kg	Approx. 16.4 kg
Maximum applicable motor capacity			2 kW	3 kW	5 kW	7.5 kW
Applicable Servomotors	3,000-r/min Servomotors	INC	—	—	—	—
		ABS	G2K030T	G3K030T	G4K030T G5K030T	—
	3,000-r/min Flat Servomotors	INC	—	—	—	—
		ABS	—	—	—	—
	2,000-r/min Servomotors	ABS	G2K020T	G3K020T	G4K020T G5K020T	G7K515T
	1,000-r/min Servomotors	ABS	—	G2K010T	G3K010T G4K510T	G6K010T
	Control method		All-digital servo			
Inverter method		IGBT-driven PWM method				
Performance	Speed control range		1:5000			
	Speed variability: Load characteristic		0.01% or less at 0% to 100% (at rated speed)			
	Speed variability: Voltage characteristic		0% at ±10% of rated voltage (at rated speed)			
	Speed variability: Temperature characteristic		±0.1% or less at 0 to 50°C (at rated speed)			
	Torque control reproducibility		±3% (at 20% to 100% of rated torque)			

Servomotor Specifications (R88M-G)

● General Specifications

Item			3,000-r/min Servomotors		3,000-r/min Flat Servomotors	1,000-r/min Servomotors 2,000-r/min Servomotors	
			50 to 750 W	1 to 5 kW	100 to 400 W	900 W to 5 kW	6 to 7.5 kW
Ambient operating temperature and humidity			0 to 40°C, 85% RH max. (with no condensation)				
Ambient storage temperature and humidity			−20 to 65°C, 85% RH max. (with no condensation)	−20 to 80°C, 85% max. (with no condensation)			
Operating and storage atmosphere			No corrosive gases				
Vibration resistance ^{*1}			10 to 2,500 Hz Acceleration of 49 m/s ² max. in the X, Y, and Z directions	10 to 2,500 Hz Acceleration of 24.5 m/s ² max. in the X, Y, and Z directions	10 to 2,500 Hz Acceleration of 49 m/s ² max. in the X, Y, and Z directions	10 to 2,500 Hz Acceleration of 24.5 m/s ² max. in the X, Y, and Z directions	
Impact resistance			Acceleration of 98 m/s ² max. 3 times each in the X, Y, and Z directions			Acceleration of 98 m/s ² max. 2 times vertically	
Insulation resistance			20 MΩ min. at 500 VDC between the power terminals and FG terminal				
Dielectric strength			1,500 VAC (50 or 60 Hz) for 1 minute between the power terminals and FG terminal				
Operating position			All directions				
Insulation grade			Type B	Type F	Type B	Type F	
Structure			Totally enclosed, self-cooling				
Protective structure			IP65 (excluding the output shaft rotating section and lead wire ends)				
Vibration grade			V-15				
Mounting method			Flange-mounting				
International standards	EC Directives	EMC Directive	EN 55011 Class A Group 1				
			EN 61000-6-2, IEC 61000-4-2/-3/-4/-5/-6/-11				
		Low-voltage Directive	IEC 60034-1/-5				
	UL standards		UL 1004				UL: pending ^{*2}
	CSA standards		CSA 22.2 No.100				

^{*1} The amplitude may be amplified by mechanical resonance. Do not exceed 80% of the specified value for extended periods of time.

^{*2} UL application pending for motor sizes from 6 to 7.5 kW.

Note: 1. Do not use the cable when it is laid in oil or water.

Note: 2. Do not expose the cable outlet or connections to stress due to bending or the weight of the cable itself.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

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Servomotor Specifications (R88M-G)

● Characteristics

3,000-r/min Cylindrical Servomotors

100-VAC Input Power

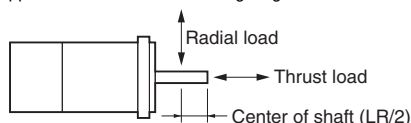
Model (R88M-)			G05030H	G10030L	G20030L	G40030L
Item	Unit		G05030T	G10030S	G20030S	G40030S
Rated output ^{*1}	W		50	100	200	400
Rated torque ^{*1}	N·m		0.16	0.32	0.64	1.3
Rated rotation speed	r/min		3000			
Max. momentary rotation speed	r/min		5000			
Max. momentary torque ^{*1}	N·m		0.45	0.93	1.78	3.6
Rated current ^{*1}	A (rms)		1.1	1.7	2.5	4.6
Max. momentary current ^{*1}	A (rms)		3.4	5.1	7.6	13.9
Rotor inertia	kg·m ² (GD ² /4)		2.5 × 10 ⁻⁶	5.1 × 10 ⁻⁶	1.4 × 10 ⁻⁵	2.6 × 10 ⁻⁵
Applicable load inertia	—		30 times the rotor inertia max.* ²			
Torque constant ^{*1}	N·m/A		0.14	0.19	0.26	0.28
Power rate ^{*1}	kW/s		10.4	20.1	30.3	62.5
Mechanical time constant	ms		1.56	1.11	0.72	0.55
Electrical time constant	ms		0.7	0.8	2.5	2.9
Allowable radial load ^{*3}	N		68	68	245	245
Allowable thrust load ^{*3}	N		58	58	98	98
Weight	Without brake	kg	Approx. 0.3	Approx. 0.5	Approx. 0.8	Approx. 1.2
	With brake	kg	Approx. 0.5	Approx. 0.7	Approx. 1.3	Approx. 1.7
Radiation shield dimensions (material)			100 × 80 × t10 (Al)		130 × 120 × t12 (Al)	
Applicable Servo Drives (R88D-)			GNA5L-ML2	GN01L-ML2	GN02L-ML2	GN04L-ML2
Brake specifications	Brake inertia	kg·m ² (GD ² /4)	2 × 10 ⁻⁷	2 × 10 ⁻⁷	1.8 × 10 ⁻⁶	1.8 × 10 ⁻⁶
	Excitation voltage ^{*4}	V	24 VDC ±5%			
	Power consumption (at 20°C)	W	7	7	9	9
	Current consumption (at 20°C)	A	0.3	0.3	0.36	0.36
	Static friction torque	N·m	0.29 min.	0.29 min.	1.27 min.	1.27 min.
	Attraction time ^{*5}	ms	35 max.	35 max.	50 max.	50 max.
	Release time ^{*5}	ms	20 max.	20 max.	15 max.	15 max.
	Backlash		1° (reference value)			
	Allowable work per braking	J	39.2	39.2	137	137
	Allowable total work	J	4.9 × 10 ³	4.9 × 10 ³	44.1 × 10 ³	44.1 × 10 ³
	Allowable angular acceleration	rad/s ²	30,000 max. (Speed of 2,800 r/min or more must not be changed in less than 10 ms)			
	Brake life	—	10,000,000 operations			
	Rating	—	Continuous			
Insulation grade	—	Type B				

*1. These are the values when the Servomotor is combined with a Servo Drive at room temperature (20°C, 65%). The maximum momentary torque shown above indicates the standard value.

*2. Applicable Load Inertia:

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the dynamic brake resistor may burn. Do not repeatedly turn the Servomotor ON and OFF while the dynamic brake is enabled.

*3. The allowable radial and thrust loads are the values determined for a service life of 20,000 hours at normal operating temperatures. The allowable radial loads are applied as shown in the following diagram.



*4. This is an OFF brake. (It is reset when excitation voltage is applied).

*5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 manufactured by Okaya Electric Industries Co., Ltd.).

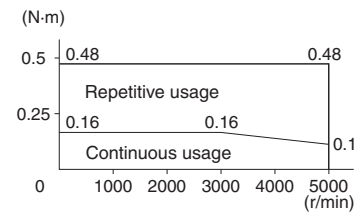
Torque and Rotation Speed Characteristics

3,000-r/min Cylindrical Servomotors

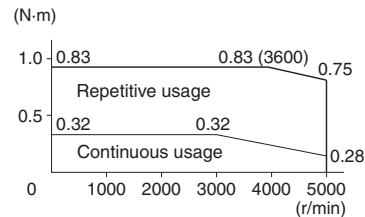
• 3,000-r/min Servomotors with 100-VAC Power Input

The following graphs show the characteristics with a 3-m standard cable and a 100-VAC input.

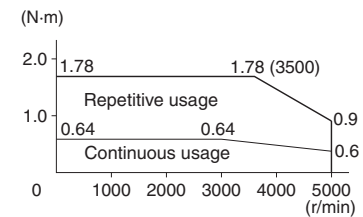
R88M-G05030H/T (50 W)



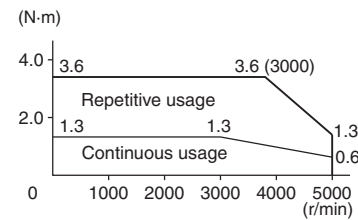
R88M-G10030L/S (100 W)



R88M-G20030L/S (200 W)



R88M-G40030L/S (400 W)



Concepts
New Product Information/ Motion Network Lineup
Controller Features
Servo System Features
CX-Drive/ Motor Selection Program
Servomotors, and Servo Drives Selection Guide
Controllers Position Control Units
Controllers Motion Control Units
OMNUC G
OMNUC W
SMARTSTEP Junior

Servomotor Specifications (R88M-G)

● Characteristics

3,000-r/min Cylindrical Servomotors

200-VAC Input Power

Model (R88M-)			G05030H	G10030H	G20030H	G40030H	G75030H	—	—	—	—	—	—
Item		Unit	G05030T	G10030T	G20030T	G40030T	G75030T	G1K030T	G1K530T	G2K030T	G3K030T	G4K030T	G5K030T
Rated output ^{*1}		W	50	100	200	400	750	1000	1500	2000	3000	4000	5000
Rated torque ^{*1}		N·m	0.16	0.32	0.64	1.3	2.4	3.18	4.77	6.36	9.54	12.6	15.8
Rated rotation speed		r/min	3000										
Max. momentary rotation speed		r/min	5000				4500	5000				4500	
Max. momentary torque ^{*1}		N·m	0.45	0.90	1.78	3.67	7.05	9.1	12.8	18.4	27.0	36.3	45.1
Rated current ^{*1}		A (rms)	1.1	1.1	1.6	2.6	4	7.2	9.4	13	18.6	24.7	28.5
Max. momentary current ^{*1}		A (rms)	3.4	3.4	4.9	7.9	12.1	21.4	28.5	40	57.1	75	85.7
Rotor inertia		kg·m ² (GD ² /4)	2.5 × 10 ⁻⁶	5.1 × 10 ⁻⁶	1.4 × 10 ⁻⁵	2.6 × 10 ⁻⁵	8.7 × 10 ⁻⁵	1.69 × 10 ⁻⁴	2.59 × 10 ⁻⁴	3.46 × 10 ⁻⁴	6.77 × 10 ⁻⁴	1.27 × 10 ⁻³	1.78 × 10 ⁻³
Applicable load inertia		—	30 times the rotor inertia max. ^{*2}				20 times the rotor inertia max. ^{*2}	15 times the rotor inertia max. ^{*2}					
Torque constant ^{*1}		N·m/A	0.14	0.19	0.41	0.51	0.64	0.44	0.51	0.48	0.51	0.51	0.57
Power rate ^{*1}		kW/s	10.4	20.1	30.3	62.5	66	60	88	117	134	125	140
Mechanical time constant		ms	1.56	1.1	0.71	0.52	0.45	0.78	0.54	0.53	0.46	0.51	0.46
Electrical time constant		ms	0.7	0.79	2.6	3	4.6	6.7	10	10.8	20	20	20
Allowable radial load ^{*3}		N	68	68	245	245	392	392	490	490	490	784	784
Allowable thrust load ^{*3}		N	58	58	98	98	147	147	196	196	196	343	343
Weight	Without brake	kg	Approx. 0.3	Approx. 0.5	Approx. 0.8	Approx. 1.2	Approx. 2.3	Approx. 4.5	Approx. 5.1	Approx. 6.5	Approx. 9.3	Approx. 12.9	Approx. 17.3
	With brake	kg	Approx. 0.5	Approx. 0.7	Approx. 1.3	Approx. 1.7	Approx. 3.1	Approx. 5.1	Approx. 6.5	Approx. 7.9	Approx. 11	Approx. 14.8	Approx. 19.2
Radiation shield dimensions (material)			100 × 80 × t10 (Al)		130 × 120 × t12 (Al)		170 × 160 × t12 (Al)		320 × 300 × t30 (Al)	320 × 300 × t20 (Al)	380 × 350 × t30 (Al)		
Applicable Servo Drives (R88D-)			GN01H-ML2	GN01H-ML2	GN02H-ML2	GN04H-ML2	GN08H-ML2	GN15H-ML2	GN15H-ML2	GN20H-ML2	GN30H-ML2	GN50H-ML2	GN50H-ML2
Brake specifications	Brake inertia	kg·m ² (GD ² /4)	2 × 10 ⁻⁷	2 × 10 ⁻⁷	1.8 × 10 ⁻⁶	1.8 × 10 ⁻⁶	7.5 × 10 ⁻⁶	2.5 × 10 ⁻⁵	3.3 × 10 ⁻⁵	3.3 × 10 ⁻⁵	3.3 × 10 ⁻⁵	1.35 × 10 ⁻⁴	1.35 × 10 ⁻⁴
	Excitation voltage ^{*4}	V	24 VDC ±5%					24 VDC ±10%					
	Power consumption (at 20°C)	W	7	7	9	9	10	18	19	19	19	22	22
	Current consumption (at 20°C)	A	0.3	0.3	0.36	0.36	0.42	0.74	0.81	0.81	0.81	0.9	0.9
	Static friction torque	N·m	0.29 min.	0.29 min.	1.27 min.	1.27 min.	2.45 min.	4.9 min.	7.8 min.	7.8 min.	11.8 min.	16.1 min.	16.1 min.
	Attraction time ^{*5}	ms	35 max.	35 max.	50 max.	50 max.	70 max.	50 max.	50 max.	50 max.	80 max.	110 max.	110 max.
	Release time ^{*5}	ms	20 max.	20 max.	15 max.	15 max.	20 max.	15 max.	15 max.	15 max.	15 max.	50 max.	50 max.
	Backlash		1° (reference value)										
	Allowable work per braking	J	39.2	39.2	137	137	196	392	392	392	392	1470	1470
	Allowable total work	J	4.9 × 10 ³	4.9 × 10 ³	44.1 × 10 ³	44.1 × 10 ³	147 × 10 ³	2.0 × 10 ⁵	4.9 × 10 ⁵	4.9 × 10 ⁵	4.9 × 10 ⁵	2.2 × 10 ⁶	2.2 × 10 ⁶
	Allowable angular acceleration	rad/s ²	30,000 max. (Speed of 2,800 r/min or more must not be changed in less than 10 ms)					10,000 max. (Speed of 900 r/min or more must not be changed in less than 10 ms)					
	Brake life	—	10,000,000 operations										
Rating	—	Continuous											
Insulation grade	—	Type B					Type F						

*1. These are the values when the Servomotor is combined with a Servo Drive at room temperature (20°C, 65%). The maximum momentary torque shown above indicates the standard value.

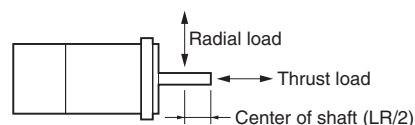
*2. Applicable Load Inertia:

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the dynamic brake resistor may burn. Do not repeatedly turn the Servomotor ON and OFF while the dynamic brake is enabled.

*3. The allowable radial and thrust loads are the values determined for a service life of 20,000 hours at normal operating temperatures. The allowable radial loads are applied as shown in the following diagram.

*4. This is an OFF brake. (It is reset when excitation voltage is applied).

*5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 manufactured by Okaya Electric Industries Co., Ltd.).



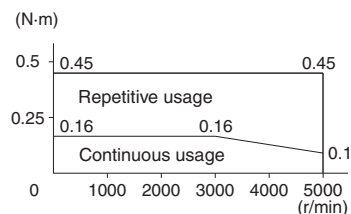
Torque and Rotation Speed Characteristics

3,000-r/min Cylindrical Servomotors

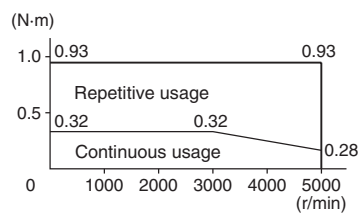
• 3,000-r/min Servomotors with 200-VAC Power Input

The following graphs show the characteristics with a 3-m standard cable and a 200-VAC input.

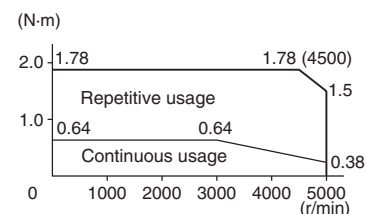
R88M-G05030H/T (50 W)



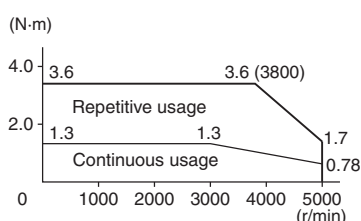
R88M-G10030H/T (100 W)



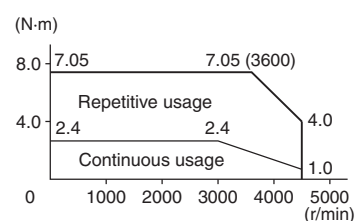
R88M-G20030H/T (200 W)



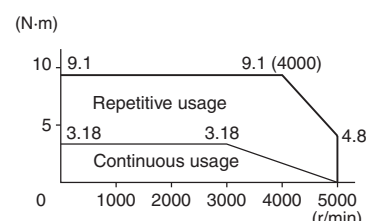
R88M-G40030H/T (400 W)



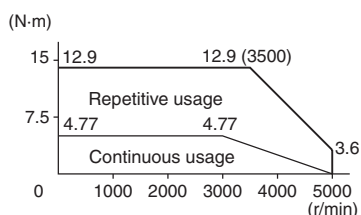
R88M-G75030H/T (750 W)



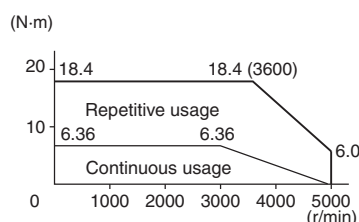
R88M-G1K030T (1 kW)



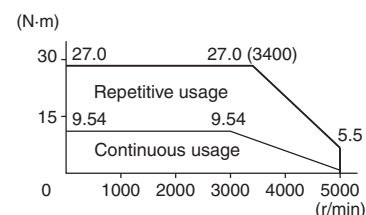
R88M-G1K530T (1.5 kW)



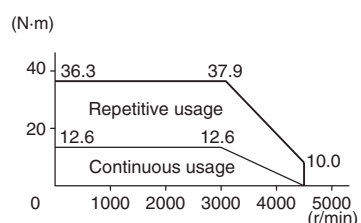
R88M-G2K030T (2 kW)



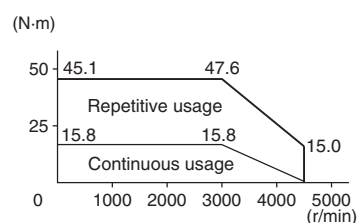
R88M-G3K030T (3 kW)



R88M-G4K030T (4 kW)



R88M-G5K030T (5 kW)



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

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Servomotor Specifications (R88M-GP)

● Characteristics

3,000-r/min Flat Servomotors

100-VAC/200-VAC Input Powers

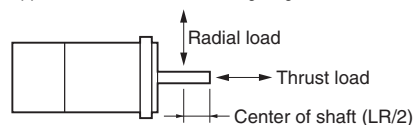
Model (R88M-)			100 VAC			200 VAC		
			GP10030L	GP20030L	GP40030L	GP10030H	GP20030H	GP40030H
Item	Unit		GP10030S	GP20030S	GP40030S	GP10030T	GP20030T	GP40030T
Rated output ^{*1}	W		100	200	400	100	200	400
Rated torque ^{*1}	N·m		0.32	0.64	1.3	0.32	0.64	1.3
Rated rotation speed	r/min		3000					
Max. momentary rotation speed	r/min		5000		4500	5000		
Max. momentary torque ^{*1}	N·m		0.84	1.8	3.6	0.86	1.8	3.65
Rated current ^{*1}	A (rms)		1.6	2.5	4.4	1	1.6	2.5
Max. momentary current ^{*1}	A (rms)		4.9	7.5	13.3	3.1	4.9	7.5
Rotor inertia	kg·m ² (GD ² /4)		1.0 × 10 ⁻⁵	3.5 × 10 ⁻⁵	6.5 × 10 ⁻⁵	1.0 × 10 ⁻⁵	3.5 × 10 ⁻⁵	6.4 × 10 ⁻⁵
Applicable load inertia	—		20 times the rotor inertia max.*2					
Torque constant ^{*1}	N·m/A		0.21	0.27	0.3	0.34	0.42	0.54
Power rate ^{*1}	kW/s		10.2	11.7	26.0	10.2	11.5	25.5
Mechanical time constant	ms		0.87	0.75	0.55	1.05	0.81	0.59
Electrical time constant	ms		3.4	6.7	6.7	2.9	5.6	6.6
Allowable radial load ^{*3}	N		68	245	245	68	245	245
Allowable thrust load ^{*3}	N		58	98	98	58	98	98
Weight	Without brake	kg	Approx. 0.7	Approx. 1.3	Approx. 1.8	Approx. 0.7	Approx. 1.3	Approx. 1.8
	With brake	kg	Approx. 0.9	Approx. 2	Approx. 2.5	Approx. 0.9	Approx. 2	Approx. 2.5
Radiation shield dimensions (material)			130 × 120 × t10 (Al)	170 × 160 × t12(Al)		130 × 120 × t10 (Al)	170 × 160 × t12 (Al)	
Applicable Servo Drives (R88D-)			GN01L-ML2	GN02L-ML2	GN04L-ML2	GN01H-ML2	GN02H-ML2	GN04H-ML2
Brake specifications	Brake inertia	kg·m ² (GD ² /4)	3 × 10 ⁻⁶	9 × 10 ⁻⁶		3 × 10 ⁻⁶	9 × 10 ⁻⁶	
	Excitation voltage ^{*4}	V	24 VDC ±10%					
	Power consumption (at 20°C)	W	7	10	10	7	10	10
	Current consumption (at 20°C)	A	0.29	0.41	0.41	0.29	0.41	0.41
	Static friction torque	N·m	0.29 min.	1.27 min.	1.27 min.	0.29 min.	1.27 min.	1.27 min.
	Attraction time ^{*5}	ms	50 max.	60 max.	60 max.	50 max.	60 max.	60 max.
	Release time ^{*5}	ms	15 max.	15 max.	15 max.	15 max.	15 max.	15 max.
	Backlash		1° (reference value)					
	Allowable work per braking	J	137	196	196	137	196	196
	Allowable total work	J	44.1 × 10 ³	147 × 10 ³	147 × 10 ³	44.1 × 10 ³	147 × 10 ³	147 × 10 ³
	Allowable angular acceleration	rad/s ²	10,000 max. (Speed of 900 r/min or more must not be changed in less than 10 ms)					
	Brake life	—	10,000,000 operations					
Rating	—	Continuous						
Insulation grade	—	Type B						

*1. These are the values when the Servomotor is combined with a Servo Drive at room temperature (20°C, 65%). The maximum momentary torque shown above indicates the standard value.

*2. Applicable Load Inertia:

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the dynamic brake resistor may burn. Do not repeatedly turn the Servomotor ON and OFF while the dynamic brake is enabled.

*3. The allowable radial and thrust loads are the values determined for a service life of 20,000 hours at normal operating temperatures. The allowable radial loads are applied as shown in the following diagram.



*4. This is an OFF brake. (It is reset when excitation voltage is applied).

*5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 manufactured by Okaya Electric Industries Co., Ltd.).

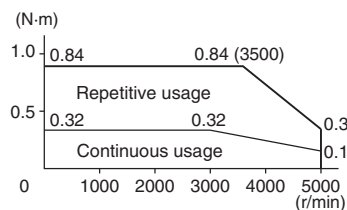
Torque and Rotation Speed Characteristics

3,000-r/min Flat Servomotors

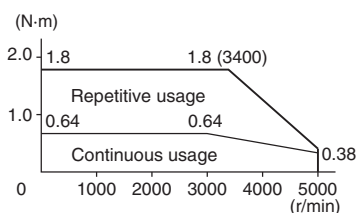
• 3,000-r/min Servomotors with 100-VAC Power Input

The following graphs show the characteristics with a 3-m standard cable and a 100-VAC input.

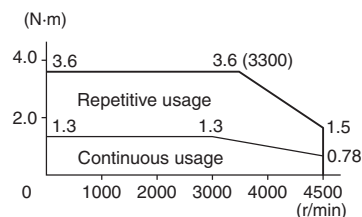
R88M-GP10030L/S (100 W)



R88M-GP20030L/S (200 W)



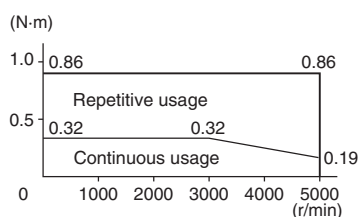
R88M-GP40030L/S (400 W)



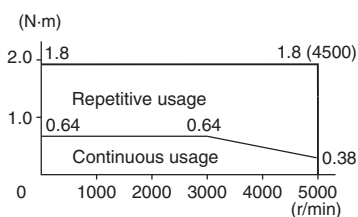
• 3,000-r/min Servomotors with 200-VAC Power Input

The following graphs show the characteristics with a 3-m standard cable and a 200-VAC input.

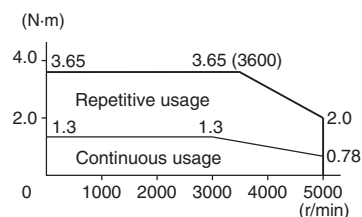
R88M-GP10030H/T (100 W)



R88M-GP20030H/T (200 W)



R88M-GP40030H/T (400 W)



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

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Servomotor Specifications (R88M-G)

● Characteristics

2,000-r/min Cylindrical Servomotors

200-VAC Input Power

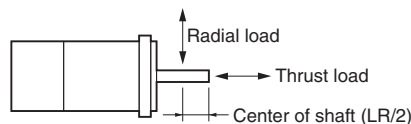
Model (R88M-)		G1K020T	G1K520T	G2K020T	G3K020T	G4K020T	G5K020T	G7K515T
Item	Unit							
Rated output ^{*1}	W	1000	1500	2000	3000	4000	5000	7500
Rated torque ^{*1}	N·m	4.8	7.15	9.54	14.3	18.8	23.8	48
Rated rotation speed	r/min	2000						1500
Max. momentary rotation speed	r/min	3000						2000
Max. momentary torque ^{*1}	N·m	13.5	19.6	26.5	41.2	54.9	70.6	111
Rated current ^{*1}	A (rms)	5.6	9.4	12.3	17.8	23.4	28	46.6
Max. momentary current ^{*1}	A (rms)	17.1	28.5	37.1	54.2	71.4	85.7	117.8
Rotor inertia	kg·m ² (GD ² /4)	6.17×10^{-4}	1.12×10^{-3}	1.52×10^{-3}	2.23×10^{-3}	4.25×10^{-3}	6.07×10^{-3}	9.9×10^{-3}
Applicable load inertia	—	10 times the rotor inertia max. ^{*2}						
Torque constant ^{*1}	N·m/A	0.88	0.76	0.78	0.81	0.81	0.85	1.03
Power rate ^{*1}	kW/s	37.3	45.8	60	91.6	83.2	93.5	230
Mechanical time constant	ms	0.7	0.81	0.75	0.72	1	0.9	0.71
Electrical time constant	ms	18	19	21	20	24	32	34
Allowable radial load ^{*3}	N	490	490	490	784	784	784	1176
Allowable thrust load ^{*3}	N	196	196	196	343	343	343	490
Weight	Without brake	kg	Approx. 6.8	Approx. 8.5	Approx. 10.6	Approx. 14.6	Approx. 18.8	Approx. 25
	With brake	kg	Approx. 8.7	Approx. 10.1	Approx. 12.5	Approx. 16.5	Approx. 21.3	Approx. 28.5
Radiation shield dimensions (material)		275 × 260 × t15 (Al)			380 × 350 × t30 (Al)	470 × 440 × t30 (Al)		
Applicable Servo Drives (R88D-)		GN10H-ML2	GN15H-ML2	GN20H-ML2	GN30H-ML2	GN50H-ML2	GN50H-ML2	GN75H-ML2
Brake specifications	Brake inertia	kg·m ² (GD ² /4)	1.35×10^{-4}			4.25×10^{-4}	4.7×10^{-4}	4.7×10^{-4}
	Excitation voltage ^{*4}	V	24 VDC ±10%					
	Power consumption(at 20°C)	W	14	19	19	22	26	34
	Current consumption (at 20°C)	A	0.59	0.79	0.79	0.9	1.1	1.4
	Static friction torque	N·m	4.9 min.	13.7 min.	13.7 min.	16.1 min.	21.5 min.	24.5 min.
	Attraction time ^{*5}	ms	80 max.	100 max.	100 max.	110 max.	90 max.	80 max.
	Release time ^{*5}	ms	70 max.	50 max.	50 max.	50 max.	35 min.	25 min.
	Backlash		1° (reference value)					
	Allowable work per braking	J	588	1176	1176	1170	1078	1372
	Allowable total work	J	7.8×10^5	1.5×10^6	1.5×10^6	2.2×10^6	2.5×10^6	2.9×10^6
	Allowable angular acceleration	rad/s ²	10,000 max. (Speed of 900 r/min or more must not be changed in less than 10 ms)					
	Brake life	—	10,000,000 operations					
	Rating	—	Continuous					
	Insulation grade	—	Type F					

*1. These are the values when the Servomotor is combined with a Servo Drive at room temperature (20°C, 65%). The maximum momentary torque shown above indicates the standard value.

*2. Applicable Load Inertia:

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the dynamic brake resistor may burn. Do not repeatedly turn the Servomotor ON and OFF while the dynamic brake is enabled.

*3. The allowable radial and thrust loads are the values determined for a service life of 20,000 hours at normal operating temperatures. The allowable radial loads are applied as shown in the following diagram.



*4. This is an OFF brake. (It is reset when excitation voltage is applied).

*5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 manufactured by Okaya Electric Industries Co., Ltd.).

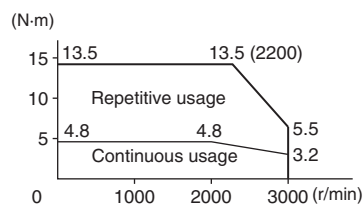
Torque and Rotation Speed Characteristics

2,000-r/min Cylindrical Servomotors

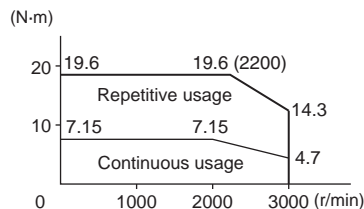
• 2,000-r/min Servomotors with 200-VAC Power Input

The following graphs show the characteristics with a 3-m standard cable and a 200-VAC input.

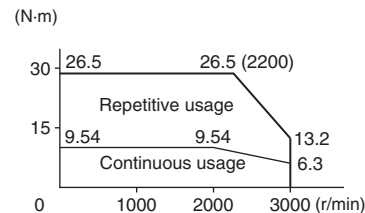
R88M-G1K020T (1 kW)



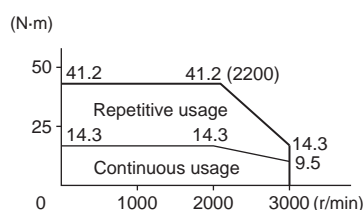
R88M-G1K520T (1.5 kW)



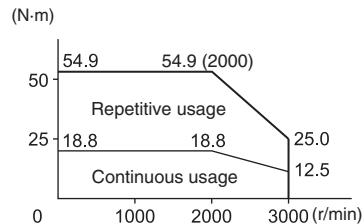
R88M-G2K020T (2 kW)



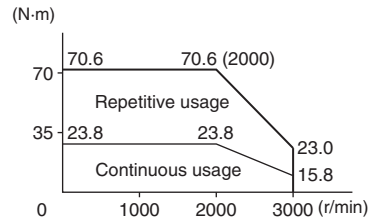
R88M-G3K020T (3 kW)



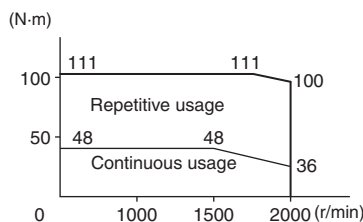
R88M-G4K020T (4 kW)



R88M-G5K020T (5 kW)



R88M-G7K515T (7.5 kW)



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

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Junior

Servomotor Specifications (R88M-G)

● Characteristics

1,000-r/min Cylindrical Servomotors

200-VAC Input Power

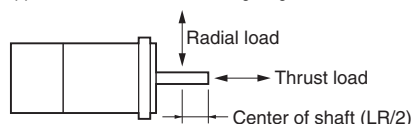
Model (R88M-)			G90010T	G2K010T	G3K010T	G4K510T	G6K010T
Item	Unit						
Rated output ^{*1}	W		900	2000	3000	4500	6000
Rated torque ^{*1}	N·m		8.62	19.1	28.4	42.9	57.2
Rated rotation speed	r/min		1000				
Max. momentary rotation speed	r/min		2000				
Max. momentary torque ^{*1}	N·m		18.4	41.5	60	101	130
Rated current ^{*1}	A (rms)		7.6	18.5	24	33	47
Max. momentary current ^{*1}	A (rms)		17.1	44	57.1	84.2	121.4
Rotor inertia	kg·m ² (GD ² /4)		1.12 × 10 ⁻³	3.55 × 10 ⁻³	5.57 × 10 ⁻³	8.09 × 10 ⁻³	9.9 × 10 ⁻³
Applicable load inertia	—		10 times the rotor inertia max.*2				
Torque constant ^{*1}	N·m/A		1.13	1	1.1	1.3	1.22
Power rate ^{*1}	kW/s		66.3	103	145	228	331
Mechanical time constant	ms		0.88	0.97	0.74	0.7	0.65
Electrical time constant	ms		20	25	30	31	46.2
Allowable radial load ^{*3}	N		686	1176	1470	1470	1764
Allowable thrust load ^{*3}	N		196	490	490	490	588
Weight	Without brake	kg	Approx. 8.5	Approx. 17.5	Approx. 25	Approx. 34	Approx. 41
	With brake	kg	Approx. 10	Approx. 21	Approx. 28.5	Approx. 39.5	Approx. 45
Radiation shield dimensions (material)			275 × 260 × t15 (Al)	470 × 440 × t30 (Al)			
Applicable Servo Drives (R88D-)			GN15H-ML2	GN30H-ML2	GN50H-ML2	GN50H-ML2	GN75H-ML2
Brake specifications	Brake inertia		kg·m ² (GD ² /4)	1.35 × 10 ⁻⁴	4.7 × 10 ⁻⁴		
	Excitation voltage ^{*4}		V	24 VDC ±10%			
	Power consumption (at 20°C)		W	19	31	34	34
	Current consumption (at 20°C)		A	0.79	1.3	1.4	1.4
	Static friction torque		N·m	13.7 min.	24.5 min.	58.8 min.	58.8 min.
	Attraction time ^{*5}		ms	100 max.	80 max.	150 max.	150 max.
	Release time ^{*5}		ms	50 max.	25 max.	50 max.	50 max.
	Backlash			1° (reference value)			
	Allowable work per braking		J	1176	1372	1372	1372
	Allowable total work		J	1.6 × 10 ⁶	2.9 × 10 ⁶	2.9 × 10 ⁶	2.9 × 10 ⁶
	Allowable angular acceleration		rad/s ²	10,000 max. (Speed of 900 r/min or more must not be changed in less than 10 ms)			
	Brake life		—	10,000,000 operations			
	Rating		—	Continuous			
	Insulation grade		—	Type F			

*1. These are the values when the Servomotor is combined with a Servo Drive at room temperature (20°C, 65%). The maximum momentary torque shown above indicates the standard value.

*2. Applicable Load Inertia:

- The operable load inertia ratio (load inertia/rotor inertia) depends on the mechanical configuration and its rigidity. For a machine with high rigidity, operation is possible even with high load inertia. Select an appropriate motor and confirm that operation is possible.
- If the dynamic brake is activated frequently with high load inertia, the dynamic brake resistor may burn. Do not repeatedly turn the Servomotor ON and OFF while the dynamic brake is enabled.

*3. The allowable radial and thrust loads are the values determined for a service life of 20,000 hours at normal operating temperatures. The allowable radial loads are applied as shown in the following diagram.



*4. This is an OFF brake. (It is reset when excitation voltage is applied).

*5. The operation time is the value (reference value) measured with a surge suppressor (CR50500 manufactured by Okaya Electric Industries Co., Ltd.).

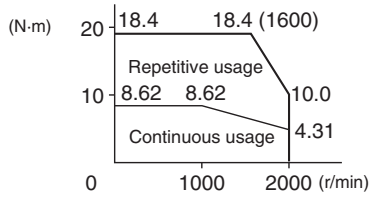
Torque and Rotation Speed Characteristics

1,000-r/min Cylindrical Servomotors

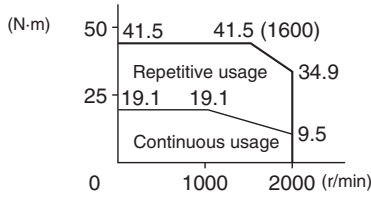
• 1,000-r/min Servomotors with 200-VAC Power Input

The following graphs show the characteristics with a 3-m standard cable and a 200-VAC input.

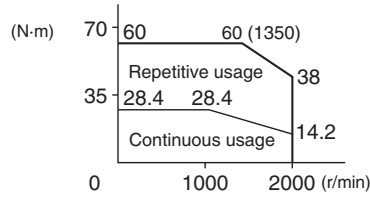
R88M-G90010T (900 W)



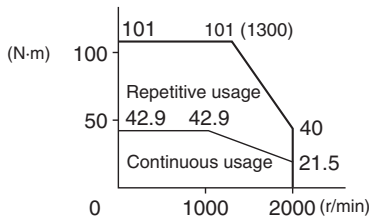
R88M-G2K010T (2 kW)



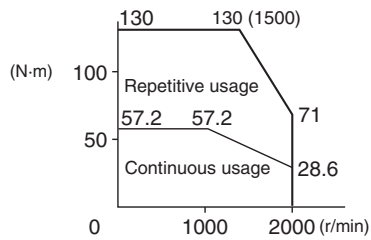
R88M-G3K010T (3 kW)



R88M-G4K510 (4.5 kW)



R88M-G6K010T (6 kW)



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

Decelerator Specifications (R88G-HPG/VRSF)

● Backlash: 3 Arcminutes Max.

Decelerators for 3,000-r/min Servomotors

Model			Rated rotation speed	Rated torque	Efficiency	Maximum momentary rotation speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N	kg
50 W	1/5	R88G-HPG11A05100B	600	0.60	75	1000	1.68	5.00×10^{-7}	135	538	0.29
	1/9	R88G-HPG11A09050B	333	1.17	81	555	3.29	3.00×10^{-7}	161	642	0.29
	1/21	R88G-HPG14A21100B	143	2.18	65	238	6.13	5.00×10^{-6}	340	1358	1.04
	1/33	R88G-HPG14A33050B	91	3.73	71	151	10.5	4.40×10^{-6}	389	1555	1.04
	1/45	R88G-HPG14A45050B	67	5.09	71	111	14.3	4.40×10^{-6}	427	1707	1.04
100 W	1/5	R88G-HPG11A05100B	600	1.37	86	1000	3.8	5.00×10^{-7}	135	538	0.29
	1/11	R88G-HPG14A11100B	273	2.63	75	454	7.39	6.00×10^{-6}	280	1119	1.04
	1/21	R88G-HPG14A21100B	143	5.40	80	238	15.2	5.00×10^{-6}	340	1358	1.04
	1/33	R88G-HPG20A33100B	91	6.91	65	151	19.4	6.50×10^{-5}	916	3226	2.4
	1/45	R88G-HPG20A45100B	67	9.42	65	111	26.5	6.50×10^{-5}	1006	3541	2.4
200 W	1/5	R88G-HPG14A05200B	600	2.49	78	1000	6.93	2.07×10^{-5}	221	883	1.02
	1/11	R88G-HPG14A11200B	273	6.01	85	454	16.7	1.93×10^{-5}	280	1119	1.09
	1/21	R88G-HPG20A21200B	143	10.2	76	238	28.5	4.90×10^{-5}	800	2817	2.9
	1/33	R88G-HPG20A33200B	91	17.0	81	151	47.4	4.50×10^{-5}	916	3226	2.9
	1/45	R88G-HPG20A45200B	67	23.2	81	111	64.6	4.50×10^{-5}	1006	3541	2.9
400 W	1/5	R88G-HPG14A05400B	600	5.66	87	1000	16.0 (15.7)	2.07×10^{-5}	221	883	1.09
	1/11	R88G-HPG20A11400B	273	11.7	82	454	33.1 (32.5)	5.70×10^{-5}	659	2320	2.9
	1/21	R88G-HPG20A21400B	143	23.5	86	238	66.5 (65.2)	4.90×10^{-5}	800	2547	2.9
	1/33	R88G-HPG32A33400B	91	34.7	81	151	98.2 (96.3)	6.20×10^{-5}	1565	6240	7.5
	1/45	R88G-HPG32A45400B	67	47.4	81	111	133.9 (131.4)	6.10×10^{-5}	1718	6848	7.5
750 W	1/5	R88G-HPG20A05750B	600	9.94	83	1000	29.2	6.80×10^{-5}	520	1832	2.9
	1/11	R88G-HPG20A11750B	273	23.2	88	454	68.1	6.00×10^{-5}	659	2320	3.1
	1/21	R88G-HPG32A21750B	143	42.3	84	238	124.3	3.00×10^{-4}	1367	5448	7.8
	1/33	R88G-HPG32A33750B	91	69.7	88	151	204.7	2.70×10^{-4}	1565	6240	7.8
	1/45	R88G-HPG32A45750B	67	95.0	88	111	279.2	2.70×10^{-4}	1718	6848	7.8
1 kW	1/5	R88G-HPG32A051K0B	600	11.5	72	1000	32.9	3.90×10^{-4}	889	3542	7.3
	1/11	R88G-HPG32A111K0B	273	28.9	83	454	82.6	3.40×10^{-4}	1126	4488	7.8
	1/21	R88G-HPG32A211K0B	143	58.1	87	238	166.1	3.00×10^{-4}	1367	5488	7.8
	1/33	R88G-HPG32A331K0B	91	94.3	90	151	270.0	2.80×10^{-4}	1565	6240	7.8
	1/45	R88G-HPG50A451K0B	67	124.2	87	100 ^{*1}	355.4	4.70×10^{-4}	4538	15694	19.0
1.5 kW	1/5	R88G-HPG32A052K0B	600	19.1	80	1000	51.3	3.90×10^{-4}	889	3542	7.4
	1/11	R88G-HPG32A112K0B	273	45.7	87	454	122.5	3.40×10^{-4}	1126	4488	7.9
	1/21	R88G-HPG32A211K5B	143	90.1	90	238	241.9	3.00×10^{-4}	1367	5448	7.9
	1/33	R88G-HPG50A332K0B	91	141.5	90	136 ^{*1}	379.7	4.80×10^{-4}	4135	14300	19.0
	1/45	R88G-HPG50A451K5B	67	192.9	90	100 ^{*1}	517.8	4.70×10^{-4}	4538	15694	19.0
2 kW	1/5	R88G-HPG32A052K0B	600	26.7	84	1000	77.4	3.90×10^{-4}	889	3542	7.4
	1/11	R88G-HPG32A112K0B	273	62.4	89	454	180.7	3.40×10^{-4}	1126	4488	7.9
	1/21	R88G-HPG50A212K0B	143	118.9	89	214 ^{*1}	343.9	5.80×10^{-4}	3611	12486	19.0
	1/33	R88G-HPG50A332K0B	91	191.8	91	136 ^{*1}	555.0	4.80×10^{-4}	4135	14300	19.0
	1/45	R88G-HPG50A451K5B	67	267.4	91	100 ^{*1}	777.4	4.70×10^{-4}	4538	15694	19.0
3 kW	1/5	R88G-HPG32A053K0B	600	42.0	88	1000	118.9	3.80×10^{-4}	889	3542	7.3
	1/11	R88G-HPG50A113K0B	273	92.3	88	409 ^{*1}	261.4	7.70×10^{-4}	2974	10285	19.0
	1/21	R88G-HPG50A213K0B	143	183.0	91	214 ^{*1}	517.7	5.80×10^{-4}	3611	12486	19.0
4 kW	1/5	R88G-HPG32A054K0B	600	53.9	90	900 ^{*1}	163.4	3.80×10^{-4}	889	3542	7.9
	1/11	R88G-HPG50A115K0B	273	124.6	90	409 ^{*1}	359.0	8.80×10^{-4}	2974	10285	19.1
5 kW	1/5	R88G-HPG50A055K0B	600	69.3	88	900 ^{*1}	197.8	1.20×10^{-3}	2347	8118	17.7
	1/11	R88G-HPG50A115K0B	273	158.4	91	409 ^{*1}	451.9	8.80×10^{-4}	2974	10285	19.1

*1. Keep the maximum rotation speed at 4,500 r/min or less.

Note: 1. The values inside parentheses () are for 100-V Servomotors.

Note: 2. The Decelerator inertia is the Servomotor shaft conversion value.

Note: 3. The protective structure for Servomotors with Decelerators satisfies IP44.

Note: 4. The allowable radial load is the value at the LR/2 position.

Note: 5. The standard models have a straight shaft. Models with a key and tap are indicated with "J" at the end of the model number (the suffix in the box).

Decelerators for 3,000-r/min Flat Servomotors

Model			Rated rotation speed	Rated torque	Efficiency	Maximum momentary rotation speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N	kg
100 W	1/5	R88G-HPG11A05100PB	600	1.37	85	1000	3.67 (3.59)	5.00×10^{-7}	135	538	0.34
	1/11	R88G-HPG14A11100PB	273	2.63	75	454	7.06 (6.89)	6.00×10^{-6}	280	1119	1.04
	1/21	R88G-HPG14A21100PB	143	5.40	80	238	14.5 (14.2)	5.00×10^{-6}	340	1358	1.04
	1/33	R88G-HPG20A33100PB	91	6.91	65	151	18.6 (18.1)	4.50×10^{-5}	916	3226	2.9
	1/45	R88G-HPG20A45100PB	67	9.42	65	111	25.3 (24.7)	4.50×10^{-5}	1006	3541	2.9
200 W	1/5	R88G-HPG14A05200PB	600	2.49	78	1000	7.01	2.07×10^{-5}	221	883	0.99
	1/11	R88G-HPG20A11200PB	273	4.75	68	454	13.4	5.80×10^{-5}	659	2320	3.1
	1/21	R88G-HPG20A21200PB	143	10.2	76	238	28.8	4.90×10^{-5}	800	2817	3.1
	1/33	R88G-HPG20A33200PB	91	17.0	81	151	47.9	4.50×10^{-5}	916	3226	3.1
	1/45	R88G-HPG20A45200PB	67	23.2	81	111	65.4	4.50×10^{-5}	1006	3541	3.1
400 W	1/5	R88G-HPG20A05400PB	600	4.67	72	1000 (900)	13.1 (12.9)	7.10×10^{-5}	520	1832	3.1
	1/11	R88G-HPG20A11400PB	273	11.7	82	454 (409)	32.9 (32.4)	5.80×10^{-5}	659	2320	3.1
	1/21	R88G-HPG20A21400PB	143	23.5	86	238 (214)	66.2 (65.2)	4.90×10^{-5}	800	2817	3.1
	1/33	R88G-HPG32A33400PB	91	34.7	81	151 (136)	97.6 (96.2)	2.80×10^{-4}	1565	6240	7.8
	1/45	R88G-HPG32A45400PB	67	47.4	81	111 (100)	133.0 (131.2)	2.80×10^{-4}	1718	6848	7.8

Note: 1. The values inside parentheses () are for 100-V Servomotors.

Note: 2. The Decelerator inertia is the Servomotor shaft conversion value.

Note: 3. The protective structure for Servomotors with Decelerators satisfies IP44.

Note: 4. The allowable radial load is the value at the LR/2 position.

Note: 5. The standard models have a straight shaft. Models with a key and tap are indicated with "J" at the end of the model number (the suffix in the box).

Decelerators for 2,000-r/min Servomotors

Model			Rated rotation speed	Rated torque	Efficiency	Maximum momentary rotation speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N	kg
1 kW	1/5	R88G-HPG32A053K0B	400	20.4	85	600	57.4	3.80×10^{-4}	889	3542	7.3
	1/11	R88G-HPG32A112K0SB	182	47.3	90	273	133.1	3.40×10^{-4}	1126	4488	7.8
	1/21	R88G-HPG32A211K0SB	95	92.3	92	143	259.7	2.90×10^{-4}	1367	5448	7.8
	1/33	R88G-HPG50A332K0SB	60	144.9	92	91	407.6	4.70×10^{-4}	4135	14300	19.0
	1/45	R88G-HPG50A451K0SB	44	197.7	92	67	555.9	4.70×10^{-4}	4538	15694	19.0
1.5 kW	1/5	R88G-HPG32A053K0B	400	31.7	89	600	86.8	3.80×10^{-4}	889	3542	7.3
	1/11	R88G-HPG32A112K0SB	182	72.1	92	273	197.7	3.40×10^{-4}	1126	4488	7.8
	1/21	R88G-HPG50A213K0B	95	137.5	92	143	377.0	5.80×10^{-4}	3611	12486	19.0
	1/33	R88G-HPG50A332K0SB	60	219.4	93	91	601.5	4.70×10^{-4}	4135	14300	19.0
2 kW	1/5	R88G-HPG32A053K0B	400	43.2	91	600	119.9	3.80×10^{-4}	889	3542	7.3
	1/11	R88G-HPG32A112K0SB	182	97.4	93	273	270.5	3.40×10^{-4}	1126	4488	7.8
	1/21	R88G-HPG50A213K0B	95	185.6	93	143	515.9	5.80×10^{-4}	3611	12486	19.0
	1/33	R88G-HPG50A332K0SB	60	270.0 ^{*1}	93	91	815.0	4.70×10^{-4}	4135	14300	19.0
3 kW	1/5	R88G-HPG32A054K0B	400	66.0	92	600	190.1	3.80×10^{-4}	889	3542	7.9
	1/11	R88G-HPG50A115K0B	182	145.2	92	273	418.3	8.80×10^{-4}	2974	10285	19.1
	1/21	R88G-HPG50A213K0SB	95	260.0 ^{*1}	93	143	806.4	6.90×10^{-4}	3611	12486	19.1
	1/25	R88G-HPG65A253K0SB	80	322.9	90	120	930.1	3.00×10^{-3}	7846	28654	52.0
4 kW	1/5	R88G-HPG50A054K0SB	400	85.8	91	600	250.3	1.20×10^{-3}	2347	8118	18.6
	1/11	R88G-HPG50A114K0SB	182	192.7	93	273	562.8	8.70×10^{-4}	2974	10285	20.1
	1/20	R88G-HPG65A204K0SB	100	342.2	91	150	999.2	3.28×10^{-3}	7338	26799	52.0
	1/25	R88G-HPG65A254K0SB	80	430.9	92	120	1258.6	3.24×10^{-3}	7846	28654	52.0
5 kW	1/5	R88G-HPG50A055K0SB	400	109.8	92	600	325.5	1.10×10^{-3}	2347	8118	22.0
	1/11	R88G-HPG50A115K0SB	182	200.0 ^{*1}	93	273	723.8	8.40×10^{-4}	2974	10285	23.5
	1/20	R88G-HPG65A205K0SB	100	438.2	92	150	1300.5	2.85×10^{-3}	7338	26799	55.4
	1/25	R88G-HPG65A255K0SB	80	550.9	93	120	1634.4	2.81×10^{-3}	7846	28654	55.4
7.5 kW	1/5	R88G-HPG65A057K5SB	300	221.1	92	400	511.2	2.07×10^{-2}	4841	17681	48.0
	1/12	R88G-HPG65A127K5SB	125	540.8	94	166	1250.7	2.02×10^{-2}	6295	22991	52.0

*1. "Rated torque" indicates the allowable rated torque for the decelerator. Do not exceed this value.

Note: 1. The Decelerator inertia is the Servomotor shaft conversion value.

Note: 2. The protective structure for Servomotors with Decelerators satisfies IP44.

Note: 3. The allowable radial load is the value at the LR/2 position.

Note: 4. The standard models have a straight shaft. Models with a key and tap are indicated with "J" at the end of the model number (the suffix in the box).

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

Decelerators for 1,000-r/min Servomotors

Model			Rated rotation speed	Rated torque	Efficiency	Maximum momentary rotation speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N	kg
900 W	1/5	R88G-HPG32A05900TB	200	39.9	93	400	85.2	3.80×10^{-4}	889	3542	7.9
	1/11	R88G-HPG32A11900TB	90	89.0	94	182	190.1	3.40×10^{-4}	1126	4488	8.4
	1/21	R88G-HPG50A21900TB	47	169.8	94	95	362.4	7.00×10^{-4}	3611	12486	19.1
	1/33	R88G-HPG50A33900TB	30	268.5	94	60	573.2	5.90×10^{-4}	4135	14300	19.1
2 kW	1/5	R88G-HPG32A052K0TB	200	90.2	95	400	196.1	4.90×10^{-4}	889	3542	8.9
	1/11	R88G-HPG50A112K0TB	90	198.4	94	182	430.9	8.40×10^{-4}	2974	10285	20.1
	1/21	R88G-HPG50A212K0TB	47	320.0 ^{*1}	95	95	786.8	6.50×10^{-4}	3611	12486	20.1
	1/25	R88G-HPG65A255K0SB	40	446.7	94	80	971.1	2.81×10^{-3}	7846	28654	55.4
3 kW	1/5	R88G-HPG50A055K0SB	200	133.9	94	400	282.9	1.10×10^{-3}	2347	8118	22.0
	1/11	R88G-HPG50A115K0SB	90	246.0 ^{*1}	95	182	684.0	8.40×10^{-4}	2974	10285	23.5
	1/20	R88G-HPG65A205K0SB	50	534.7	94	100	1129.2	2.85×10^{-3}	7338	26799	55.4
	1/25	R88G-HPG65A255K0SB	40	669.9	94	80	1411.5	2.81×10^{-3}	7846	28654	55.4
4.5 kW	1/5	R88G-HPG50A054K5TB	200	203.5	95	400	479.2	1.20×10^{-3}	2347	8118	22.0
	1/12	R88G-HPG65A127K5SB	83	485.6	94	166	1142.9	2.02×10^{-2}	6295	22991	52.0
	1/20	R88G-HPG65A204K5TB	50	813.1	95	100	1915.0	1.92×10^{-2}	7338	26799	52.0
6 kW	1/5	R88G-HPG65A057K5SB	200	268.1	94	400	609.7	2.07×10^{-2}	4841	17681	48.0
	1/12	R88G-HPG65A127K5SB	83	650.3	95	166	1477.3	2.02×10^{-2}	6295	22991	52.0

*1. "Rated torque" indicates the allowable rated torque for the decelerator. Do not exceed this value.

Note: 1. The Decelerator inertia is the Servomotor shaft conversion value.

Note: 2. The protective structure for Servomotors with Decelerators satisfies IP44.

Note: 3. The allowable radial load is the value at the LR/2 position.

Note: 4. The standard models have a straight shaft. Models with a key and tap are indicated with "J" at the end of the model number (the suffix in the box).

● Backlash: 15 Arcminutes Max.

Decelerators for 3,000-r/min Servomotors

Model			Rated rotation speed	Rated torque	Efficiency	Maximum momentary rotation speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N	kg
50 W	1/5	R88G-VRSF05B100CJ	600	0.52	65	1000	1.46	4.00×10^{-6}	392	196	0.55
	1/9	R88G-VRSF09B100CJ	333	0.93	65	556	2.63	3.50×10^{-6}	441	220	0.55
	1/15	R88G-VRSF15B100CJ	200	1.67	70	333	4.73	3.50×10^{-6}	588	294	0.70
	1/25	R88G-VRSF25B100CJ	120	2.78	70	200	7.88	3.25×10^{-6}	686	343	0.70
100 W	1/5	R88G-VRSF05B200CJ	600	1.19	75	1000	3.38	4.00×10^{-6}	392	196	0.55
	1/9	R88G-VRSF09B200CJ	333	2.29	80	556	6.48	3.50×10^{-6}	441	220	0.55
	1/15	R88G-VRSF15B200CJ	200	3.81	80	333	10.8	3.50×10^{-6}	588	294	0.70
	1/25	R88G-VRSF25B200CJ	120	6.36	80	200	18.0	3.25×10^{-6}	686	343	0.70
200 W	1/5	R88G-VRSF05C200CJ	600	2.70	85	1000	7.57	1.18×10^{-5}	392	196	0.72
	1/9	R88G-VRSF09C200CJ	333	3.77	66	556	10.6	2.75×10^{-5}	931	465	1.70
	1/15	R88G-VRSF15C200CJ	200	6.29	66	333	17.6	3.00×10^{-5}	1176	588	2.10
	1/25	R88G-VRSF25C200CJ	120	11.1	70	200	31.2	2.88×10^{-5}	1323	661	2.10
400 W	1/5	R88G-VRSF05C400CJ	600	5.40	85	1000	15.6 (15.3)	3.63×10^{-5}	784	392	1.70
	1/9	R88G-VRSF09C400CJ	333	9.50	83	556	27.4 (26.8)	2.75×10^{-5}	931	465	1.70
	1/15	R88G-VRSF15C400CJ	200	15.8	83	333	45.7 (44.8)	3.00×10^{-5}	1176	588	2.10
	1/25	R88G-VRSF25C400CJ	120	26.4	83	200	76.1 (74.7)	2.88×10^{-5}	1323	661	2.10
750 W	1/5	R88G-VRSF05C750CJ	600	10.7	90	1000	31.7	7.13×10^{-5}	784	392	2.10
	1/9	R88G-VRSF09D750CJ	333	18.2	85	556	53.9	6.50×10^{-5}	1176	588	3.40
	1/15	R88G-VRSF15D750CJ	200	30.4	85	333	89.9	7.00×10^{-5}	1372	686	3.80
	1/25	R88G-VRSF25D750CJ	120	50.7	85	200	149.8	6.80×10^{-5}	1617	808	3.80

Note: 1. The values inside parentheses () are for 100-V Servomotors.

Note: 2. The Decelerator inertia is the Servomotor shaft conversion value.

Note: 3. The protective structure for Servomotors with Decelerators satisfies IP44.

Note: 4. The allowable radial load is the value at the LR/2 position.

Note: 5. The standard models have a straight shaft with a key.

Decelerators for 3,000-r/min Flat Servomotor

Model			Rated rotation speed	Rated torque	Efficiency	Maximum momentary rotation speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N	kg
100 W	1/5	R88G-VRSF05B100PCJ	600	1.19	75	1000	3.15	4.00×10^{-6}	392	196	0.72
	1/9	R88G-VRSF09B100PCJ	333	2.29	80	556	6.048	3.50×10^{-6}	441	220	0.72
	1/15	R88G-VRSF15B100PCJ	200	3.81	80	333	10.08	3.50×10^{-6}	588	294	0.87
	1/25	R88G-VRSF25B100PCJ	120	6.36	80	200	16.8	3.25×10^{-6}	686	343	0.87
200 W	1/5	R88G-VRSF05B200PCJ	600	2.70	85	1000	7.65	1.18×10^{-5}	392	196	0.85
	1/9	R88G-VRSF09C200PCJ	333	3.77	66	556	10.692	2.75×10^{-5}	931	465	1.80
	1/15	R88G-VRSF15C200PCJ	200	6.29	66	333	17.82	3.00×10^{-5}	1176	588	2.20
	1/25	R88G-VRSF25C200PCJ	120	11.1	70	200	31.5	2.88×10^{-5}	1323	661	2.20
400 W	1/5	R88G-VRSF05C400PCJ	600	5.40	85	1000 (900)	15.5 (15.3)	3.63×10^{-5}	784	392	1.80
	1/9	R88G-VRSF09C400PCJ	333	9.50	83	556 (500)	27.3 (26.9)	2.75×10^{-5}	931	465	1.80
	1/15	R88G-VRSF15C400PCJ	200	15.8	83	333 (300)	45.4 (44.8)	3.00×10^{-5}	1176	588	2.20
	1/25	R88G-VRSF25C400PCJ	120	26.4	83	200 (180)	75.7 (74.7)	2.88×10^{-5}	1323	661	2.20

Note: 1. The values inside parentheses () are for 100-V Servomotors.

Note: 2. The Decelerator inertia is the Servomotor shaft conversion value.

Note: 3. The protective structure for Servomotors with Decelerators satisfies IP44.

Note: 4. The allowable radial load is the value at the LR/2 position.

Note: 5. The standard models have a straight shaft with a key.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

Encoder, External Regeneration Resistors, Reactor and Parameter Unit Specifications

● Encoder Specifications

Incremental Encoders

Item	Specifications
Encoder system	Optical encoder
No. of output pulses	Phases A and B: 2,500 pulses/rotation, Phase Z: 1 pulse/rotation
Power supply voltage	5 VDC $\pm 5\%$
Power supply current	180 mA (max.)
Output signals	+S, -S
Output interface	RS-485 compliance

Absolute Encoders

Item	Specifications
Encoder system	Optical encoder 17 bits
No. of output pulses	Phases A and B: 32,768 pulses/rotation, Phase Z: 1 pulse/rotation
Maximum rotations	-32,768 to +32,767 rotations or 0 to 65,534 rotations
Power supply voltage	5 VDC $\pm 5\%$
Power supply current	110 mA (max.)
Applicable battery voltage	3.6 VDC
Current consumption of battery	180 μ A for a maximum of 5 s right after power interruption 100 μ A for operation during power interruption 3.6 μ A when power is supplied to Servo Drive
Output signals	+S, -S
Output interface	RS-485 compliance

● External Regeneration Resistors Specifications

Model	Resistance	Nominal capacity	Regeneration absorption for 120°C temperature rise	Heat radiation condition	Thermal switch output specifications
R88A-RR08050S	50 Ω	80 W	20 W	Aluminum 250 \times 250, Thickness: 3.0	Operating temperature: 150°C $\pm 5\%$, NC contact, Rated output: 30 VDC, 50 mA max.
R88A-RR080100S	100 Ω				
R88A-RR22047S	47 Ω	220 W	70 W	Aluminum 350 \times 350, Thickness: 3.0	Operating temperature: 170°C $\pm 5\%$, NC contact, Rated output: 250 VAC, 0.2 A max.
R88A-RR50020S	20 Ω	500 W	180 W	Aluminum 600 \times 600, Thickness: 3.0	Operating temperature: 200°C $\pm 7\%$, NC contact, Rated output: 250 VAC, 0.2 A max. 24 VDC, 0.2 A max.

● Reactor Specifications

Servo Drive	Reactor				Reactor type
	Model	Rated current	Inductance	Weight	
R88D-GNA5L-ML2 R88D-GN01H-ML2	3G3AX-DL2002	1.6 A	21.4 mH	Approx. 0.8 kg	Single-phase
R88D-GN01L-ML2 R88D-GN02H-ML2	3G3AX-DL2004	3.2 A	10.7 mH	Approx. 1.0 kg	Single-phase
R88D-GN02L-ML2 R88D-GN04H-ML2	3G3AX-DL2007	6.1 A	6.75 mH	Approx. 1.3 kg	Single-phase
R88D-GN04L-ML2 R88D-GN08H-ML2 R88D-GN10H-ML2	3G3AX-DL2015	9.3 A	3.51 mH	Approx. 1.6 kg	Single-phase
R88D-GN15H-ML2	3G3AX-DL2022	13.8 A	2.51 mH	Approx. 2.1 kg	Single-phase
R88D-GN08H-ML2 R88D-GN10H-ML2 R88D-GN15H-ML2	3G3AX-AL2025	10.0 A	2.8 mH	Approx. 2.8 kg	Three-phase
R88D-GN20H-ML2 R88D-GN30H-ML2	3G3AX-AL2055	20.0 A	0.88 mH	Approx. 4.0 kg	Three-phase
R88D-GN50H-ML2	3G3AX-AL2110	34.0 A	0.35 mH	Approx. 5.0 kg	Three-phase
R88D-GN75H-ML2	3G3AX-AL2220	67.0 A	0.18 mH	Approx. 10.0 kg	Three-phase

● R88A-PR02G Parameter Unit Specifications

General Specifications

Item	Specifications
Operating ambient temperature	0 to 55°C
Operating ambient humidity	90% max. (with no condensation)
Storage ambient temperature	-20 to 80°C
Storage ambient humidity	90% max. (with no condensation)
Storage and operating atmosphere	No corrosive gases
Vibration resistance	5.9 m/s ² max.

Performance Specifications

Item		Specifications
Type		Hand-held
Cable length		1.5 m
Connectors		Mini DIN 8-pin MD connector
Display		7-segment LED
External dimensions		62 × 114 × 15 mm (W × H × D)
Weight		Approx. 0.1 kg (including cable that is provided)
Communications specifications	Standard	RS-232
	Communications method	Asynchronous (ASYNC)
	Baud rate	9,600 bps
	Start bits	1 bit
	Data	8 bits
	Parity	None
	Stop bits	1 bit

Concepts

New Product Information/
Motion Network LineupController
FeaturesServo System
FeaturesCX-Drive/
Motor Selection ProgramServomotors, and
Servo Drives
Selection GuideControllers
Position Control UnitsControllers
Motion Control Units

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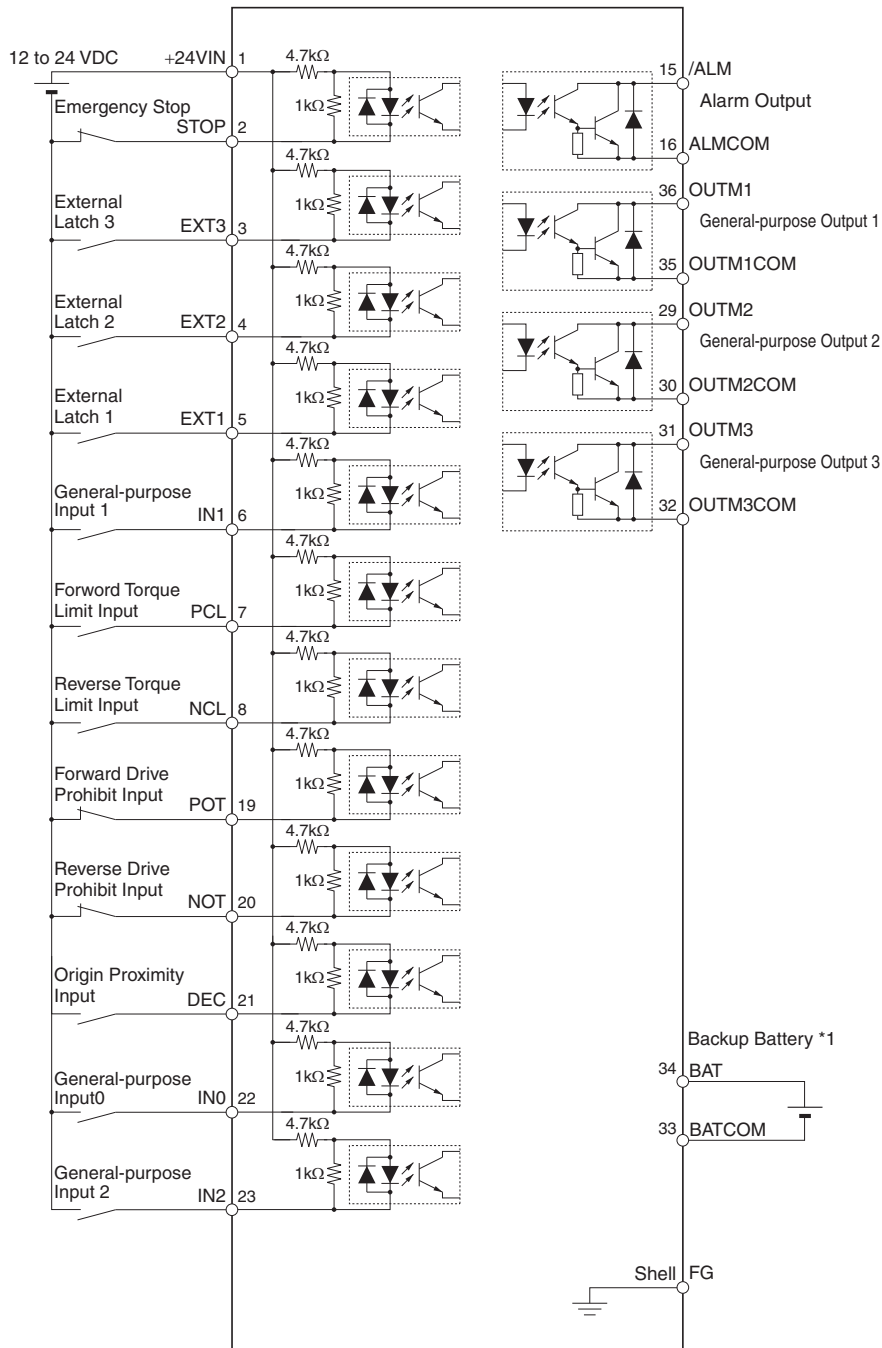
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Connections

● Control I/O Connector Specifications (CN1)

Control I/O Signal Connections and External Signal Processing



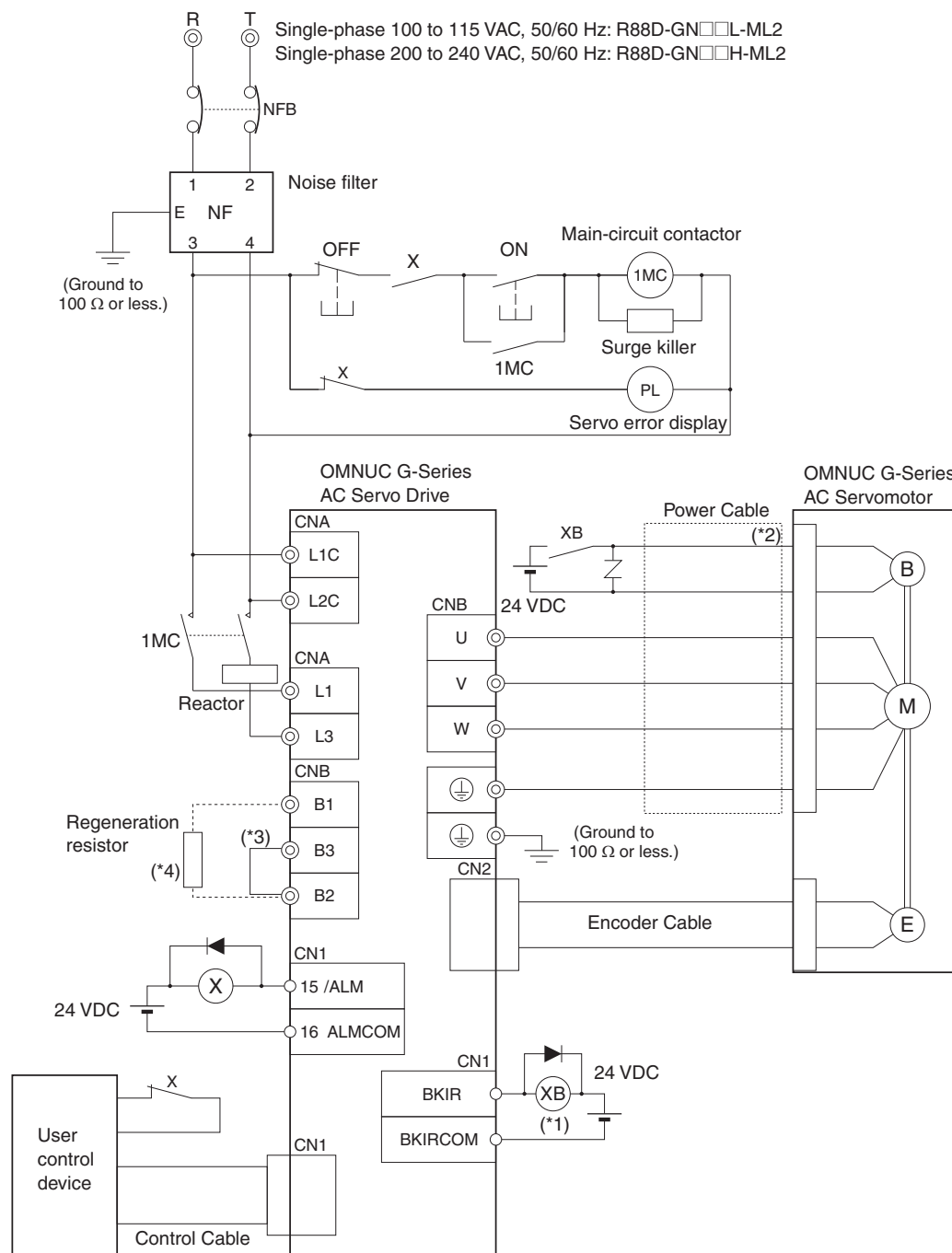
*1. If a backup battery is connected, a cable with a battery is not required.

*2. Inputs for pins 19 and 20 are determined by parameter settings. The diagram shows the default configuration.

● Peripheral Device Connection Examples

R88D-GNA5L-ML2/-GN01L-ML2/-GN02L-ML2/-GN04L-ML2

R88D-GN01H-ML2/-GN02H-ML2/-GN04H-ML2/-GN08H-ML2/-GN10H-ML2/-GN15H-ML2



- *1. Recommended relay: MY Relay (24 V), by OMRON. For example, the MY2 Relay's rated inductive load is 2 A at 24 VDC and applicable to all G-Series Servomotors with brakes.
- *2. The brake is not affected by the polarity of the power supply.
- *3. Connect B2-B3 for the models with a built-in regeneration resistor (GN04L-ML2, GN08H-ML2, GN10H-ML2, and GN15H-ML2). If the amount of regeneration is large, disconnect B2-B3 and connect an External Regeneration Resistor to B1-B2.
- *4. The models GNA5L-ML2 to GN02L-ML2 and GN01H-ML2 to GN04H-ML2 do not have a built-in regeneration resistor. If the amount of regeneration is large, an External Regeneration Resistor must be connected to B1-B2.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

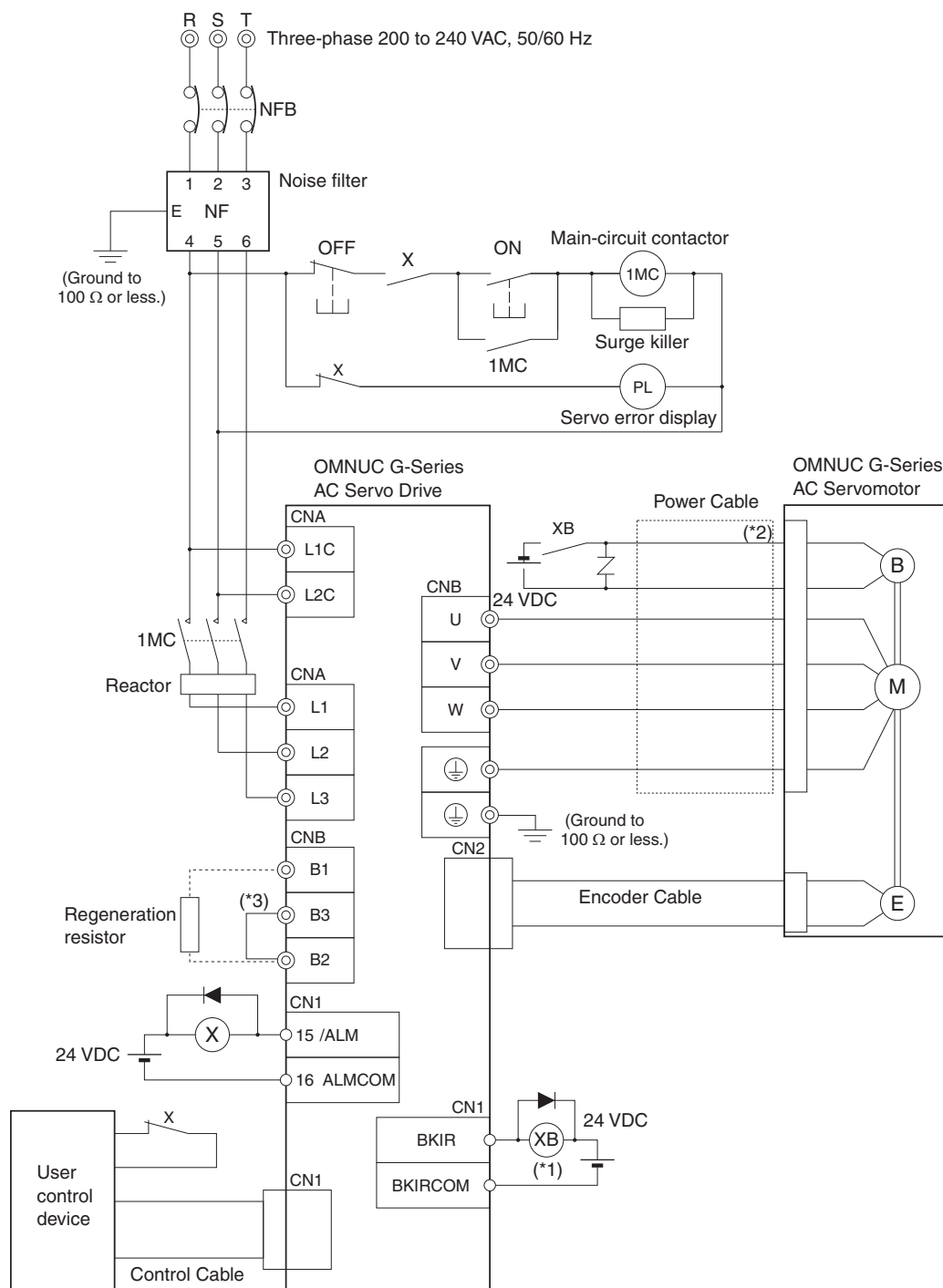
Controllers
Motion Control Units

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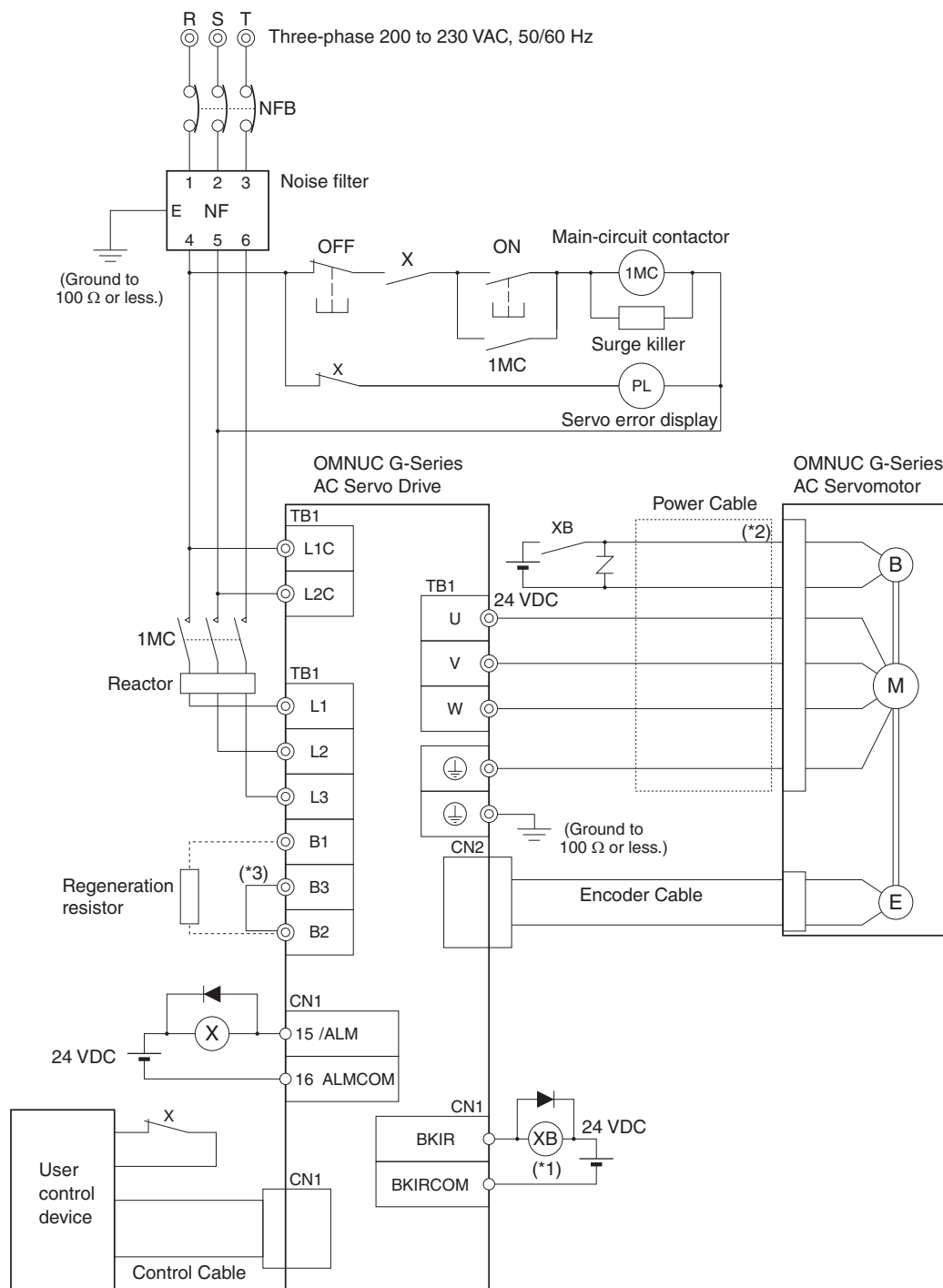
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R88D-GN08H-ML2/-GN10H-ML2/-GN15H-ML2



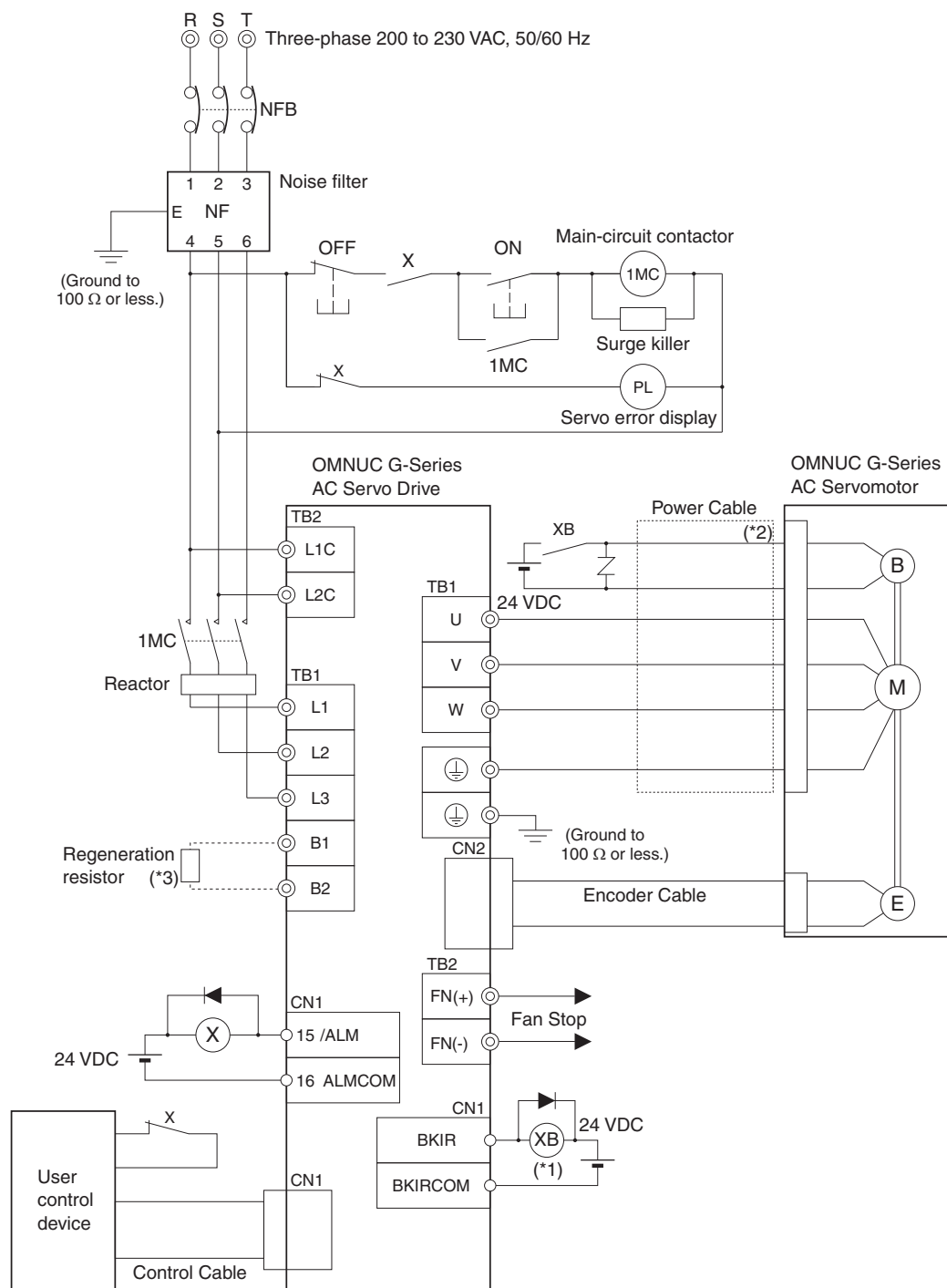
- *1. Recommended relay: MY Relay (24 V), by OMRON. For example, the MY2 Relay's rated inductive load is 2 A at 24 VDC and applicable to all G-Series Servomotors with brakes.
- *2. The brake is not affected by the polarity of the power supply.
- *3. Connect B2-B3 for the models with a built-in regeneration resistor (GN08H-ML2 to GN15H-ML2).
If the amount of regeneration is large, disconnect B2-B3 and connect an External Regeneration Resistor to B1-B2.
- *4. Connect B2-B3 for the models with a built-in regeneration resistor (GN08H-ML2 to GN15H-ML2).
If the amount of regeneration is large, disconnect B2-B3 and connect an External Regeneration Resistor to B1-B2.

R88D-GN20H-ML2/-GN30H-ML2/-GN50H-ML2



- *1. Recommended relay: MY Relay (24 V), by OMRON. For example, the MY2 Relay's rated inductive load is 2 A at 24 VDC and applicable to all G-Series Servomotors with brakes.
- *2. The brake is not affected by the polarity of the power supply.
- *3. Connect B2-B3 for the models with a built-in regeneration resistor (GN08H-ML2 to GN15H-ML2). If the amount of regeneration is large, disconnect B2-B3 and connect an External Regeneration Resistor to B1-B2.

R88D-GN75H-ML2



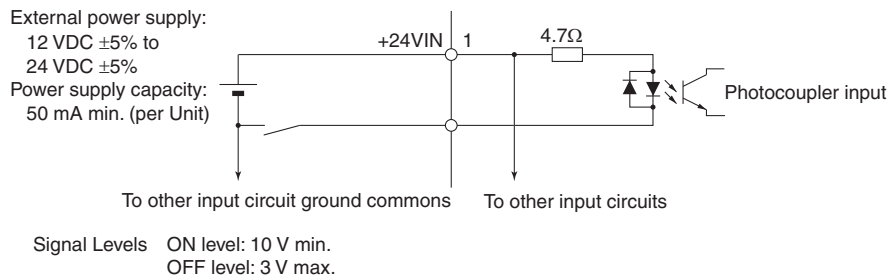
- *1. Recommended relay: MY Relay (24 V), by OMRON. For example, the MY2 Relay's rated inductive load is 2 A at 24 VDC and applicable to all G-Series Servomotors with brakes.
- *2. The brake is not affected by the polarity of the power supply.
- *3. The model GN75H-ML2 does not have a built-in regeneration resistor. If the amount of regeneration is large, an External Regeneration Resistor must be connected to B1-B2.

I/O Circuit Diagrams

● Control Input Circuits

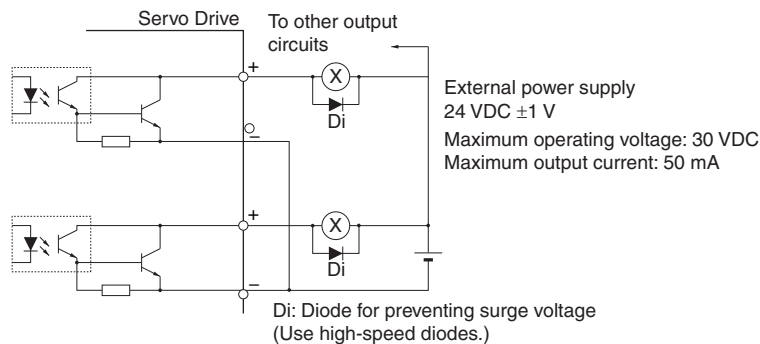
• Control Inputs

For the relay contact, use either a switch, or a transistor with an open-collector output.



● Control Output Circuits

• Control Outputs



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

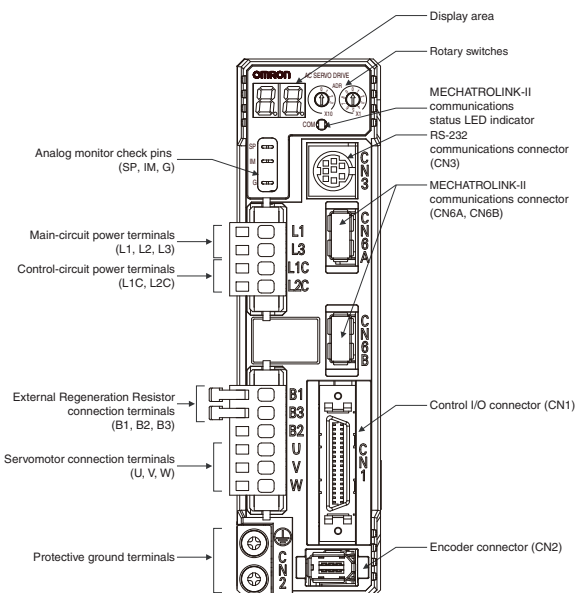
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Components and Functions

● Servo Drive Part Names



- R88D-GNA5L-ML2/-GN01L-ML2/-GN02L-ML2
- R88D-GN04L-ML2/-GN01H-ML2/-GN02H-ML2
- R88D-GN04H-ML2/-GN08H-ML2/-GN10H-ML2
- R88D-GN15H-ML2

● Main Circuit Connector (CNA)

Symbol	Name
L1	Main circuits power supply input
L2	
L3	
L1C	Control circuit power supply input
L2C	

● Servomotor Connector (CNB)

Symbol	Name
B1	External Regeneration Resistor connection terminals
B2	
B3	
U	Servomotor connection terminals
V	
W	
⏏	
⏏	Frame ground

● R88D-GN20H-ML2/-GN30H-ML2/-GN50H-ML2

● Main Circuit Terminal Block Specifications

Symbol	Name
L1	Main circuit power supply input
L2	
L3	
L1C	Control circuit power supply input
L2C	
B1	External Regeneration Resistor connection terminals
B2	
B3	
U	Servomotor connection terminals
V	
W	
⏏	
⏏	Frame ground

● R88D-GN75H-ML2

● Main Circuit Terminal Block Specifications (TB1)

Symbol	Name
L1	Main circuit power supply input
L2	
L3	
B1	External Regeneration Resistor connection terminals
B2	
U	Servomotor connection terminals
V	
W	
⏏	
⏏	Frame ground

● Main Circuit Terminal Block Specifications (TB2)

Symbol	Name
L1C	Control circuit power supply input
L2C	
⏏	Frame ground
FN (+)	Fan Stop Output
FN (-)	

● Display Area

A 2-digit 7-segment LED display shows the Servo Drive status, alarm codes, parameters, and other information.

● Analog Monitor Check Pins (SP, IM, and G)

The actual motor speed, command speed, torque, and number of accumulated pulses can be measured based on the analog voltage level by using an oscilloscope. Set the type of signal to be output and the output voltage level by setting the Speed Monitor (SP) Selection (Pn007) and Torque Monitor (IM) Selection (Pn008).

● MECHATROLINK-II Status LED Indicator

Indicates the communications status of the MECHATROLINK-II.

● Rotary Switches

Sets the node address.

● CN1 Control Input Signals

Pin No.	Symbol	Name
1	+24VIN	12 to 24-VDC Power Supply Input
2	STOP	Emergency Stop Input
3	EXT3	External Latch Signal 3
4	EXT2	External Latch Signal 2
5	EXT1	External Latch Signal 1
6	IN1	External general-purpose Input 1
7	PCL	Forward Torque Limit Input
8	NCL	Reverse Torque Limit Input
19 to 20*	POT	Forward Drive Prohibit Input
	NOT	Reverse Drive Prohibit Input
21	DEC	Origin Proximity Input
22	IN0	External general-purpose Input 0
23	IN2	External general-purpose Input 2
34	BAT	Backup Battery Input ABS
33	BATCOM	

*Forward and reverse rotation over travel input.

● CN1 Control Output Signals

Pin No.	Symbol	Name
15	/ALM	Alarm Output
16	ALMCOM	
29	OUTM2	General-purpose Output 2 (READY)
30	OUTM2COM	
31	OUTM3	General-purpose Output 3 (CLIM)
32	OUTM3COM	
36	OUTM1	General-purpose Output 1 (BKIR)
35	OUTM1COM	

● Encoder Connector Specifications (CN2)

Pin No.	Symbol	Name
1	E5V	Encoder power supply +5 V
2	E0V	Encoder power supply GND
3	BAT+	Battery +
4	BAT-	Battery -
5	PS+	Encoder +phase S Input
6	PS-	Encoder -phase S Input
Shell	FG	Shield ground

● Parameter Unit Connector Specifications (CN3)

Pin No.	Symbol	Name
3	TXD	RS-232 send data
4	GND	Ground
5	RXD	RS-232 receive data

● Protective Functions

Error detection
Control power supply undervoltage
Overvoltage
Undervoltage
Overcurrent
Overheating
Overload
Regeneration overload
Encoder communications error
Encoder communications data error
Deviation counter overflow
Overspeed
Command error
Internal deviation counter overflow
Overrun limit error
Parameter error
Parameter corruption
Drive prohibit input error
Absolute encoder system down error ABS
Absolute encoder counter overflow error ABS
Absolute encoder overspeed error ABS
Absolute encoder one-turn counter error ABS
Absolute encoder multi-turn counter error ABS
Absolute encoder status error ABS
Encoder phase Z error
Encoder PS signal error
Node address setting error
Communications error
Transmission cycle error
Watchdog data error
Emergency stop input error
Transmission cycle setting error
SYNC command error
Parameter setting error
Servomotor non-conformity

Concepts

New Product Information/
Motion Network LineupController
FeaturesServo System
FeaturesCX-Drive/
Motor Selection ProgramServomotors, and
Servo Drives
Selection GuideControllers
Position Control UnitsControllers
Motion Control Units

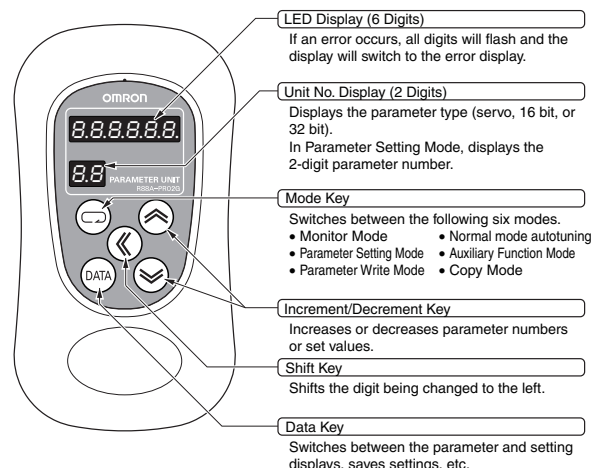
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Parameter

● R88A-RP02G : Parameter Unit Part Names



● Servo Parameters

Parameter name	Explanation
Default Display	Selects the data to be displayed on the 7-segment LED display on the front panel.
Torque Limit Selection	Selects the torque limit function, or the torque feed-forward function during speed control.
Drive Prohibit Input Selection	Selects the function for the Forward and Reverse Drive Prohibit Inputs (CN1 POT: pin 19, NOT: pin 20).
Communications Control	Controls errors and warnings for MECHATROLINK-II communications.
Power ON Address Display Duration Setting	Sets the duration to display the node address when the control power is turned ON.
Speed Monitor (SP) Selection	Selects the output to the Analog Speed Monitor (SP on the front panel).
Torque Monitor (IM) Selection	Selects the output to the Analog Torque Monitor (IM on the front panel).
Prohibit Parameter Changes via Network	Allows/prohibits parameter changes via the network.
Operation Switch When Using Absolute Encoder	Selects how the absolute encoder is used.
RS-232 Baud Rate Setting	Sets the baud rate for RS-232 communications.
Position Loop Gain (RT)	Sets the position loop responsiveness.
Speed Loop Gain (RT)	Sets the speed loop responsiveness.
Speed Loop Integration Time Constant (RT)	Adjusts the speed loop integration time constant.
Speed Feedback Filter Time Constant (RT)	Sets the type of speed detection filter time constant. Normally, use a setting of 0.
Torque Command Filter Time Constant (RT)	Adjusts the first-order lag filter time constant for the torque command section.
Speed Feed-forward Amount (RT)	Sets the speed feed-forward amount.
Feed-forward Filter Time Constant (RT)	Sets the time constant for the speed feed-forward first-order lag filter.
Position Loop Gain 2 (RT)	Sets the position loop gain when using gain 2 switching.
Speed Loop Gain 2 (RT)	Sets the speed loop gain when using gain 2 switching.
Speed Loop Integration Time Constant 2 (RT)	Sets the speed loop integration time constant when using gain 2 switching.
Speed Feedback Filter Time Constant 2 (RT)	Sets the speed detection filter when using gain 2 switching.
Torque Command Filter Time Constant 2 (RT)	Sets the first-order lag filter time constant for the torque command section when using gain 2 switching.

Parameter name	Explanation
Notch Filter 1 Frequency	Sets the notch frequency of notch filter 1 for resonance suppression.
Notch Filter 1 Width	Selects the notch width of notch filter 1 for resonance suppression.
Inertia Ratio (RT)	Selects the load inertia as a percentage of the Servomotor rotor inertia.
Realtime Autotuning Mode Selection	Sets the operating mode for realtime autotuning.
Realtime Autotuning Machine Rigidity Selection	Sets the machine rigidity for realtime autotuning.
Adaptive Filter Selection	Enables or disables the adaptive filter.
Vibration Filter Selection	Selects the vibration filter type and the switching mode.
Normal Mode Autotuning Operation Setting	Sets the operating pattern for normal mode autotuning.
Overrun Limit Setting	Sets the Servomotor's allowable operating range for the position command input range.
Instantaneous Speed Observer Setting (RT)	The Instantaneous Speed Observer improves speed detection accuracy, thereby improving responsiveness and reducing vibration when stopping.
Notch Filter 2 Frequency	Sets the notch frequency of notch filter 2 for resonance suppression.
Notch Filter 2 Width	Selects the notch width of notch filter 2 for resonance suppression.
Notch Filter 2 Depth	Selects the notch depth of notch filter 2 for resonance suppression.
Vibration Frequency 1	Sets the vibration frequency 1 for damping control to suppress vibration at the end of the load.
Vibration Filter 1 Setting	When setting Vibration Frequency 1 (Pn02B), reduce this setting if torque saturation occurs, or increase it to make the movement faster.
Vibration Frequency 2	Sets the vibration frequency 2 for damping control to suppress vibration at the end of the load.
Vibration Filter 2 Setting	Sets vibration filter 2 for damping control to suppress vibration at the end of the load.
Adaptive Filter Table Number Display	Displays the table entry number corresponding to the frequency of the adaptive filter.
Gain Switching Operating Mode Selection (RT)	Enables or disables gain switching.
Gain Switch Setting (RT)	Sets the trigger for gain switching. The details depend on the control mode.
Gain Switch Time (RT)	Enabled when the Gain Switch Setting (Pn031) is set to 3, or 5 to 10. Sets the lag time from the trigger detection to actual gain switching when switching from gain 2 to gain 1.
Gain Switch Level Setting (RT)	Sets the judgment level to switch between Gain 1 and Gain 2 when the Gain Switch Setting (Pn031) is set to 3, 5, 6, 9, or 10. The unit for the setting depends on the condition set in the Gain Switch Setting (Pn031).
Gain Switch Hysteresis Setting (RT)	Sets the hysteresis of the judgment level for the Gain Switch Level Setting (Pn033) when the Gain Switch Setting (Pn031) is set to 3, 5, 6, 9, or 10. The unit for the setting depends on the condition set for the Gain Switch Setting (Pn031).
Position Loop Gain Switching Time (RT)	This parameter can prevent the position loop gain from increasing suddenly when the position loop gain and position loop gain 2 differ by a large amount.
Jog Speed	Sets the jog operation speed with the Parameter Unit or CX-Drive.
Emergency Stop Input Setting	Enables the Emergency Stop Input (STOP).
Origin Proximity Input Logic Setting	Sets the logic for the Origin Proximity Input (DEC).

Parameter name	Explanation
Operating Direction Setting	Sets the relationship between polarity of operation data sent over the network and the direction of Servomotor rotation.
Input Signal Selection	Sets the terminal assignment for Drive Prohibit Input.
Speed Limit	Sets the speed limit for torque control mode.
Soft Start Acceleration Time	Sets the acceleration time for speed control mode.
Soft Start Deceleration Time	Sets the deceleration time for speed control mode.
Speed Limit Selection	Sets the speed limit for torque control mode.
No.1 Torque Limit	Sets the No.1 Torque Limit for the Servomotor output torque.
No.2 Torque Limit	Sets the No.2 Torque Limit for the Servomotor output torque.
Positioning Completion Range 1	Sets the positioning completion range when Positioning Completion 1 (INP1) Output is selected.
Speed Conformity Signal Output Width	Sets the detection width for the speed conformity detection (VCMP) signal.
Rotation Speed for Motor Rotation Detection	Sets the threshold level for the speed reached (TGON) signal.
Positioning Completion Range 2	Sets the positioning completion range when Positioning Completion 2 (INP2) is selected.
Motor Phase Current Offset Re-adjustment Setting	Enables or disables the offset component readjustment function of the Motor Phase Current Detector (CT) for Servo ON command inputs. The readjustment is made when control power is turned ON.
Undervoltage Alarm Selection	Selects whether to activate the main power supply undervoltage function (alarm code 13) when the main power supply is interrupted for the duration of the Momentary Hold Time (Pn06D) during Servo ON.
Stop Selection for Drive Prohibition Input	Sets the operation used to decelerate to a stop when the Forward Drive Prohibit Input (POT) or Reverse Drive Prohibit Input (NOT) is enabled.
Stop Selection with Main Power OFF	Sets the operation to be performed during deceleration and after stopping after the main power supply is turned OFF with the Undervoltage Alarm Selection (Pn065) set to 0. The deviation counter will be reset when the power OFF is detected.
Stop Selection for Alarm Generation	Sets the deceleration process and stop status after an alarm is issued by the protective function. The deviation counter will be reset when an alarm is issued.
Stop Selection with Servo OFF	Sets the operation after a Servo OFF. The relationship between set values, operation, and deviation counter processing for this parameter is the same as for the Stop Selection with Main Power OFF (Pn067).
Brake Timing when Stopped	Sets the duration from Brake Interlock (BKIR) signal detection to Servo OFF.
Brake Timing during Operation	Sets the duration from Servo OFF to when the Brake Interlock (BKIR) signal is turned OFF.
Regeneration Resistor Selection	Sets the regeneration resistor operation and the regeneration overload (alarm code 18) operation. Set this parameter to 0 if using the built-in regeneration resistor.
Momentary Hold Time	Sets the amount of time required to detect shutoff when the main power supply continues to shut off. The main power OFF detection will be disabled if this parameter is set to 1000.
Emergency Stop Torque	Sets the torque limit during deceleration because of the Drive Prohibition Input when the Stop Selection for Drive Prohibition Input (Pn066) is set to 2.
Overload Detection Level Setting	Sets the overload detection level.
Overspeed Detection Level Setting	Sets the overspeed detection level.

● 16-bit Positioning Parameters

Parameter name	Explanation
Backlash Compensation Selection	Enables or disables the backlash compensation for position control, and sets the compensation direction.
Backlash Compensation	Sets the backlash compensation amount for position control.
Backlash Compensation Time Constant	Sets the backlash compensation time constant for position control.
Soft Limit	Enables or disables the soft limit.
Origin Range	Sets the threshold for detecting the origin (ZPOINT) in absolute values.
Linear Acceleration Constant	Sets the acceleration for positioning operations.
Linear Deceleration Constant	Sets the deceleration for positioning operations.
Moving Average Time	Sets the moving average time for position commands.
Origin Return Mode Settings	Sets the direction for origin return.
Origin Return Approach Speed 1	Sets the operating speed for origin return, from when the origin proximity signal is turned ON, to when it is turned OFF and the latch signal is detected.
Origin Return Approach Speed 2	Sets the operating speed for origin return, from when the latch signal is detected, to when the Origin Return Final Distance (Pn204) is reached.
General-purpose Output 1 Function Selection	Selects the function for general-purpose output 1 (OUTM1).
General-purpose Output 2 Function Selection	Selects the function for general-purpose output 2 (OUTM2). The set values and the functions are the same as for general-purpose output 1 (OUTM1).
General-purpose Output 3 Function Selection	Selects the function for general-purpose output 3 (OUTM3). The set values and the functions are the same as for general-purpose output 1 (OUTM1).

● 32-bit Positioning Parameters

Parameter name	Explanation
Absolute Origin Offset	Sets the offset amount for the encoder position and the mechanical coordinate system position when using an absolute encoder.
Forward Software Limit	Sets the soft limit in the forward direction.
Reverse Software Limit	Sets the soft limit for the reverse direction.
Final Distance for External Input Positioning	Sets the distance to travel after detecting the latch signal input position when performing external input positioning.
Origin Return Final Distance	Sets the distance from the latch signal input position to the origin when performing origin return.
Electronic Gear Ratio 1 (Numerator)	Sets the numerator for the electronic gear ratio.
Electronic Gear Ratio 2 (Denominator)	Sets the denominator for the electronic gear ratio.
Deviation Counter Overflow Level	Sets the deviation counter overflow level.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

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Dimensions

(Unit: mm)

● Servo Drives

● Single-phase 100 VAC (50 to 100 W)

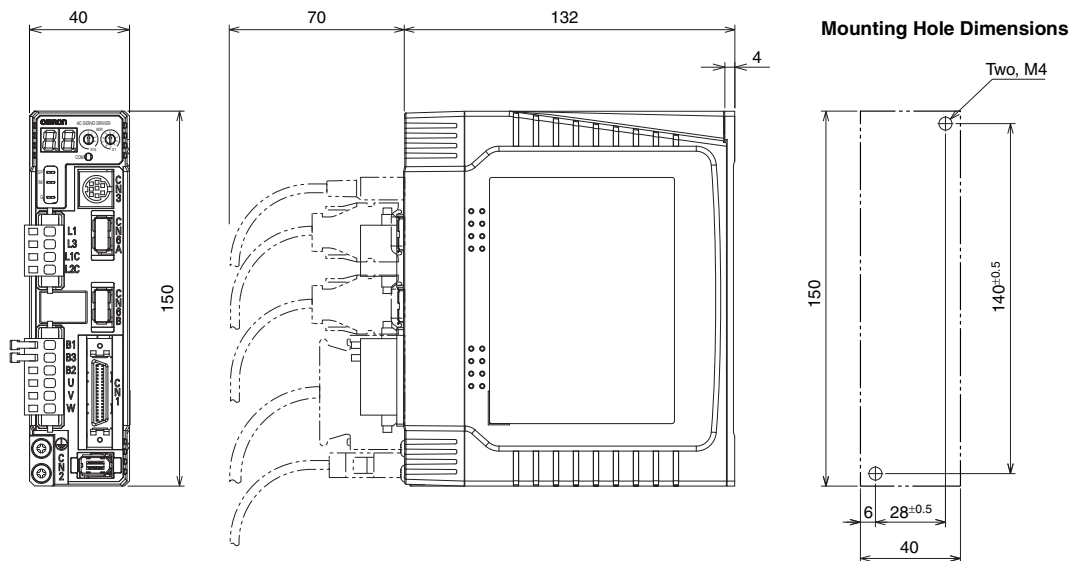
R88D-GNA5L-ML2

R88D-GN01L-ML2

● Single-phase 200 VAC (50 to 200 W)

R88D-GN01H-ML2

R88D-GN02H-ML2

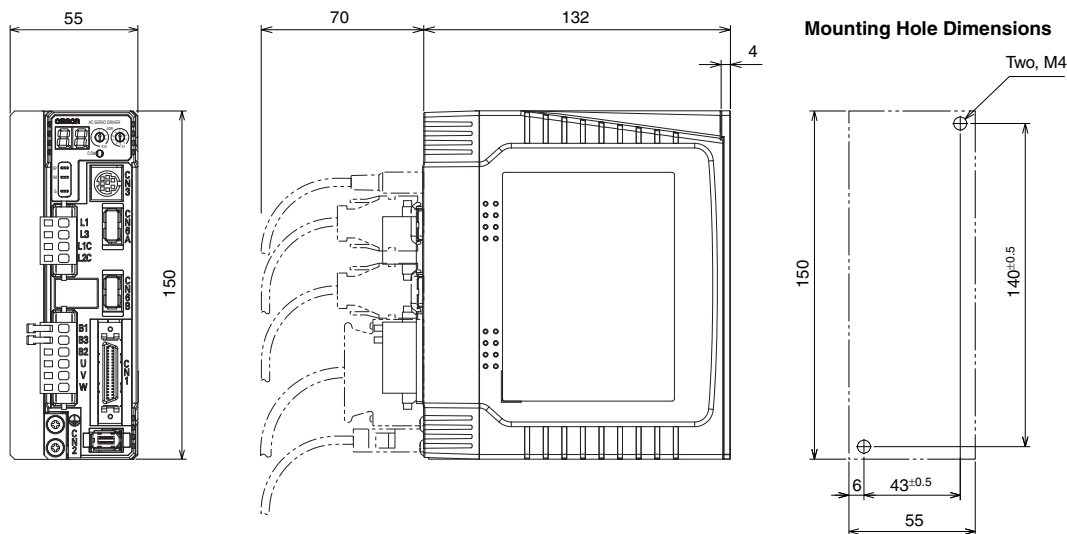


● Single-phase 100 VAC (200 W)

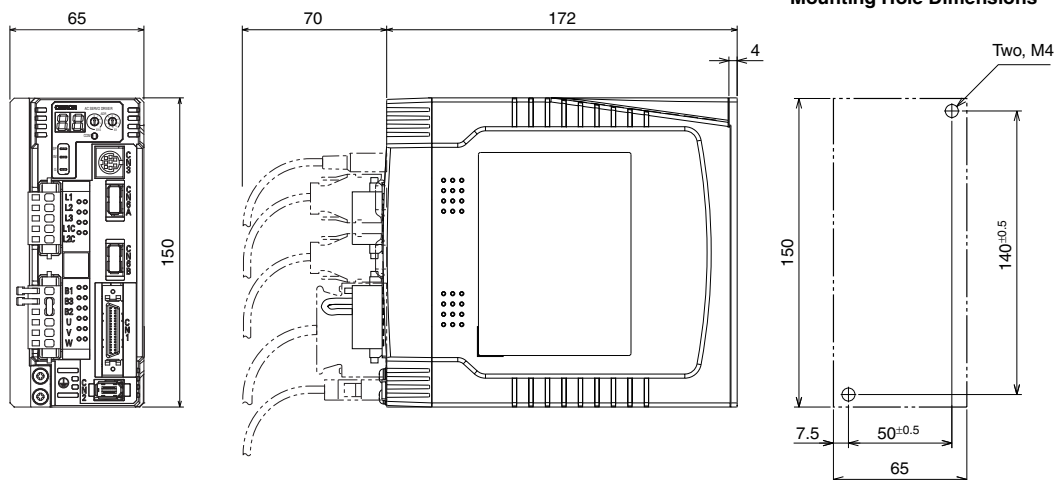
R88D-GN02L-ML2

● Single-phase 200 VAC (400 W)

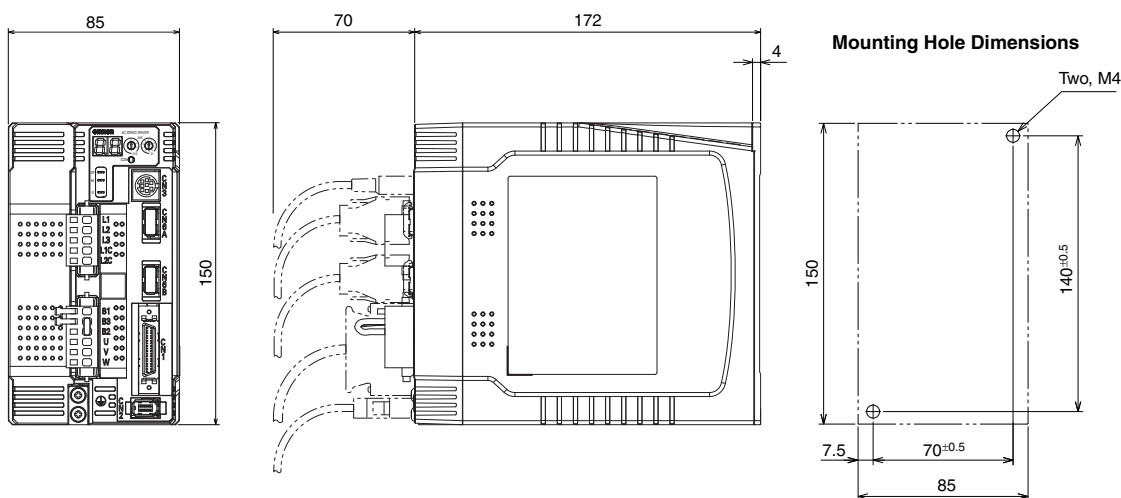
R88D-GN04H-ML2



- Single-phase 100 VAC (400 W)
R88D-GN04L-ML2
- Single-phase/Three-phase 200 VAC (750 W)
R88D-GN08H-ML2



- Single-phase/Three-phase 200 VAC (900 W to 1.5 kW)
R88D-GN10H-ML2
R88D-GN15H-ML2



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

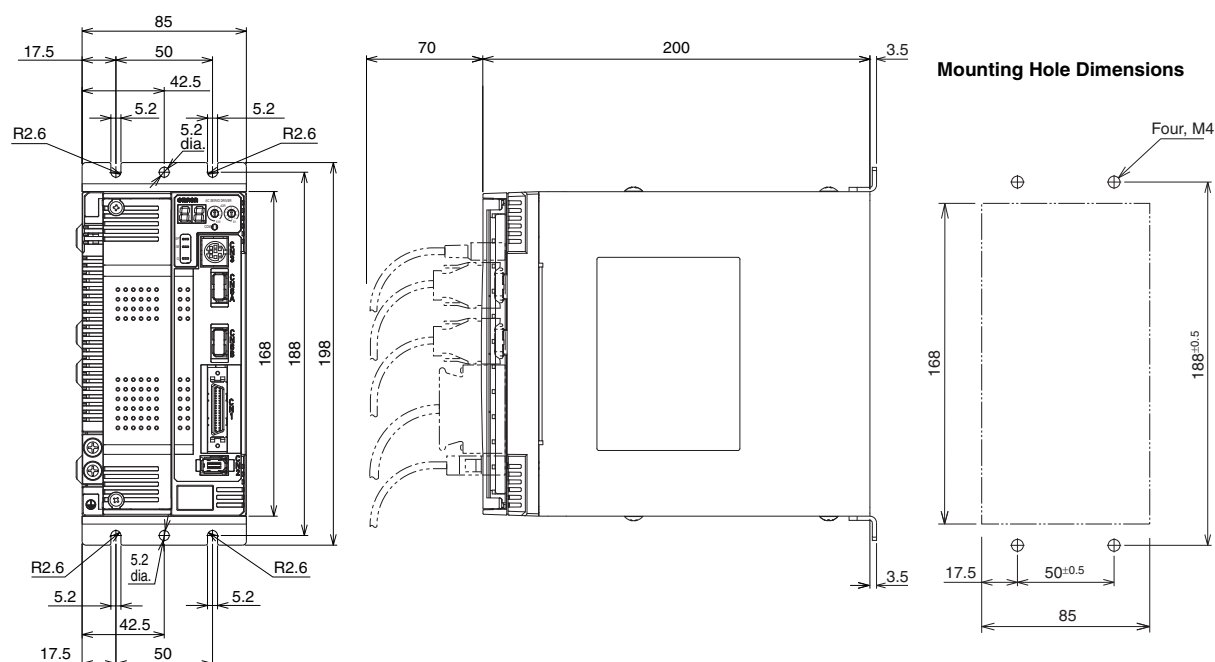
Controllers
Motion Control Units

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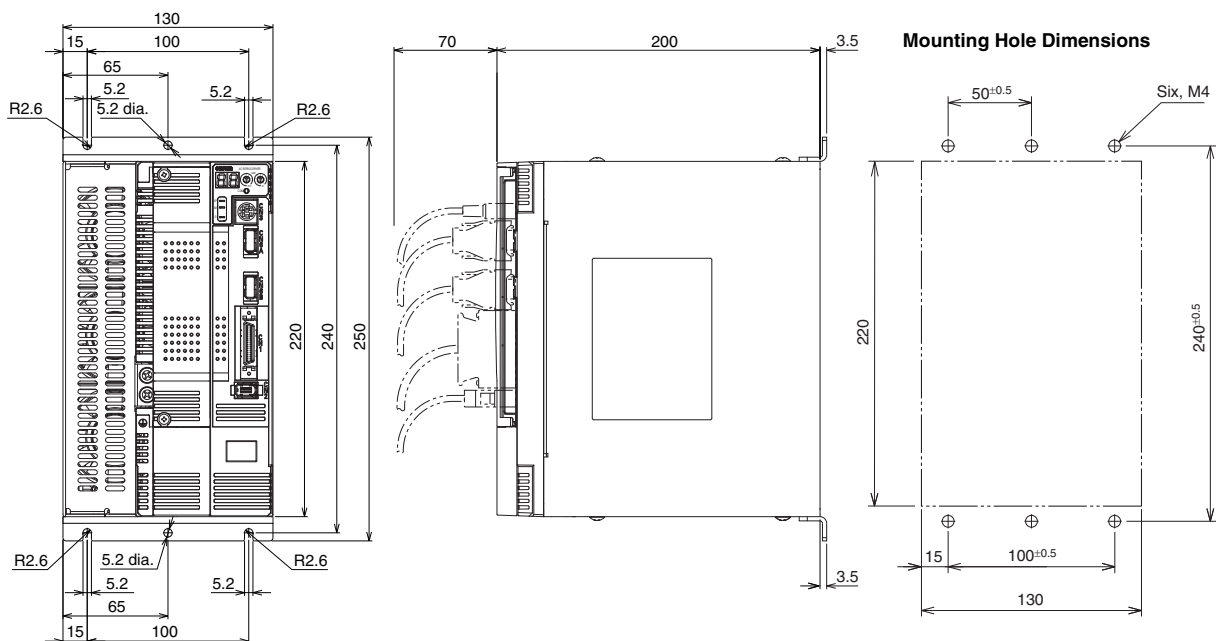
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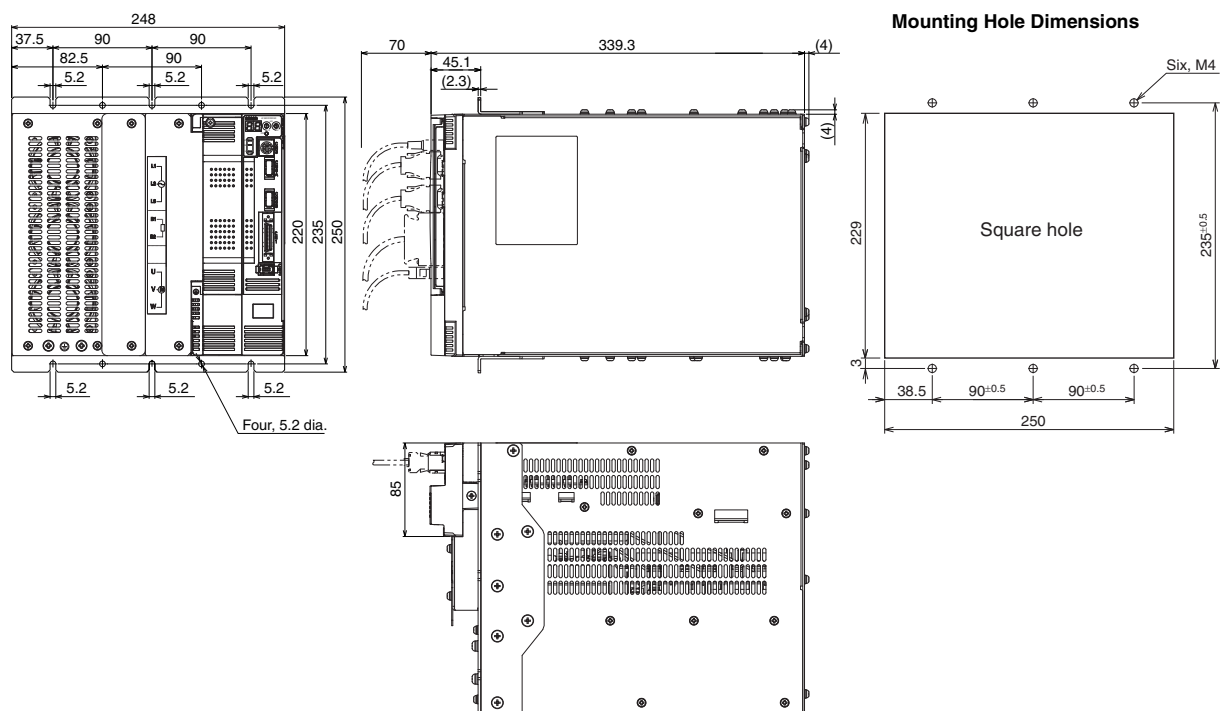
• Three-phase 200 VAC (2 kW)
R88D-GN20H-ML2



• Three-phase 200 VAC (2 to 5 kW)
R88D-GN30H-ML2
R88D-GN50H-ML2



- **Three-phase 200 VAC (7.5 kW)**
R88D-GN75H-ML2
Front Panel Mounting (Using Mounting Brackets)



● Servomotors

3,000-r/min Cylindrical Servomotors

● 50 W/100 W

INC

R88M-G05030H (-S2)
R88M-G10030L (-S2)
R88M-G10030H (-S2)
R88M-G05030H-B (S2)
R88M-G10030L-B (S2)
R88M-G10030H-B (S2)

ABS

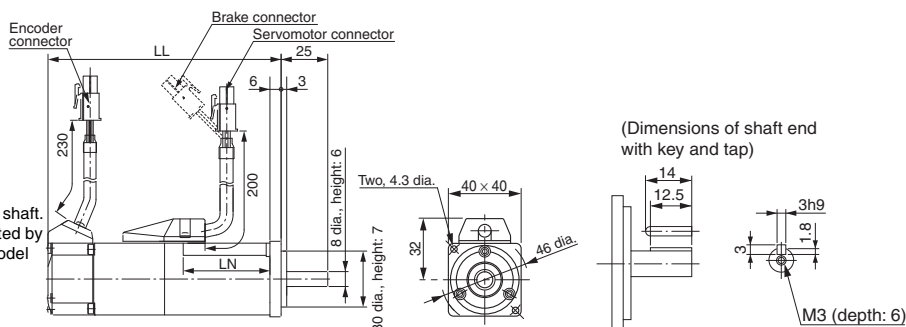
R88M-G05030T (-S2)
R88M-G10030S (-S2)
R88M-G10030T (-S2)
R88M-G05030T-B (S2)
R88M-G10030S-B (S2)
R88M-G10030T-B (S2)

Model	LL	LN
R88M-G05030□	72	26.5
R88M-G10030□	92	46.5
R88M-G05030□-B	102	26.5
R88M-G10030□-B	122	46.5

*The empty box in the L, H, L, T or S.

Note: The standard models have a straight shaft.

A model with a key and tap is indicated by adding "S2" to the end of the model number.



● 200 W/400 W/750 W

INC

R88M-G20030L (-S2)
R88M-G40030L (-S2)
R88M-G20030H (-S2)
R88M-G40030H (-S2)
R88M-G75030H (-S2)
R88M-G20030L-B (S2)
R88M-G40030L-B (S2)
R88M-G20030H-B (S2)
R88M-G40030H-B (S2)
R88M-G75030H-B (S2)

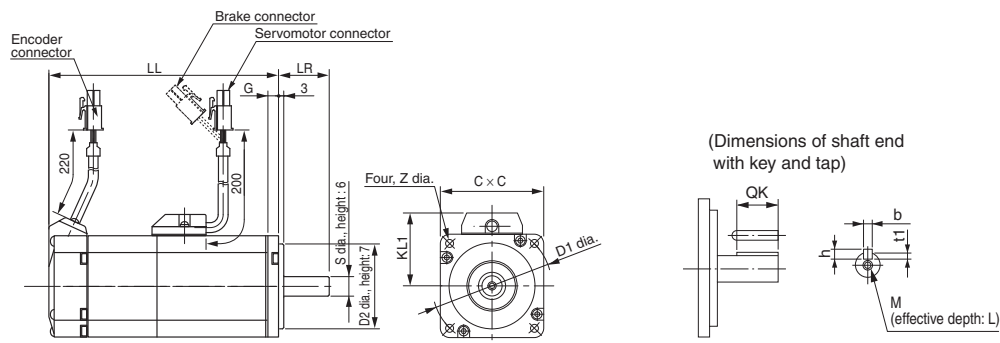
ABS

R88M-G20030S (-S2)
R88M-G40030S (-S2)
R88M-G20030T (-S2)
R88M-G40030T (-S2)
R88M-G75030T (-S2)
R88M-G20030S-B (S2)
R88M-G40030S-B (S2)
R88M-G20030T-B (S2)
R88M-G40030T-B (S2)
R88M-G75030T-B (S2)

Model	LL	LR	S	D1	D2	C	G	Z	KL1	QK	b	h	M	t1	L
R88M-G20030□	79.5	30	11	70	50	60	6.5	4.5	43	18	4h9	4	M4	2.5	8
R88M-G40030□	99		14							22.5	5h9	5		3	
R88M-G75030□	112.2	35	19	90	70	80	8	6	53	22	6h9	6	M5	3.5	10
R88M-G20030□-B	116	30	11	70	50	60	6.5	4.5	43	18	4h9	4		2.5	
R88M-G40030□-B	135.5		14							22.5	5h9	5	M5	3	10
R88M-G75030□-B	149.2	35	19	90	70	80	8	6	53	22	6h9	6		3.5	

*The empty box in the L, H, L, T or S.

Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number.



- 1 kW/1.5 kW/2 kW

ABS

R88M-G1K030T (-S2)

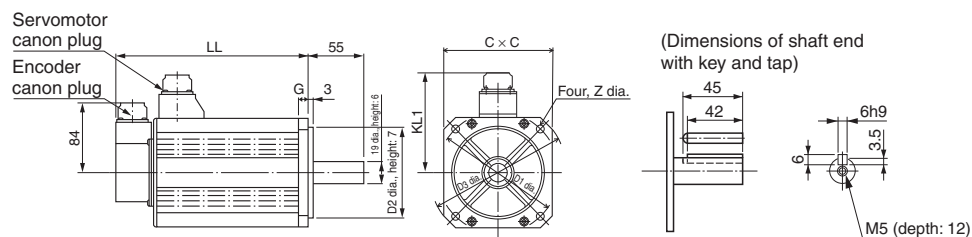
R88M-G1K530T (-S2)

R88M-G2K030T (-S2)

R88M-G1K030T-B (S2)

R88M-G1 K530T-B (S2)

R88M-G2K030T-B (S2)



Model	LL	D1	D2	C	D3	G	KL1	Z
R88M-G1K030T	175	100	80	90	120	7	98	6.6
R88M-G1K530T	180	115	95	100	135	10	103	9
R88M-G2K030T	205							
R88M-G1K030T-B	200	100	80	90	120	7	98	6.6
R88M-G1K530T-B	205	115	95	100	135	10	103	9
R88M-G2K030T-B	230							

Note: The standard models have a straight shaft.

A model with a key and tap is indicated by adding "S2" to the end of the model number.

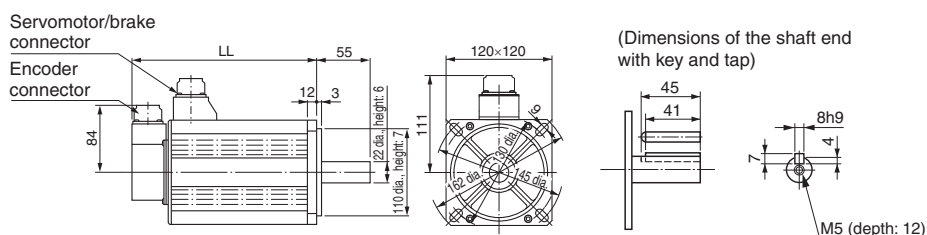
- 3 kW

ABS

R88M-G3K030T (-S2)

R88M-G3K030T-B (S2)

Model	LL
R88M-G3K030T	217
R88M-G3K030T-B	242



Note: The standard models have a straight shaft.

A model with a key and tap is indicated by adding "S2" to the end of the model number.

- 4 kW/5 kW

ABS

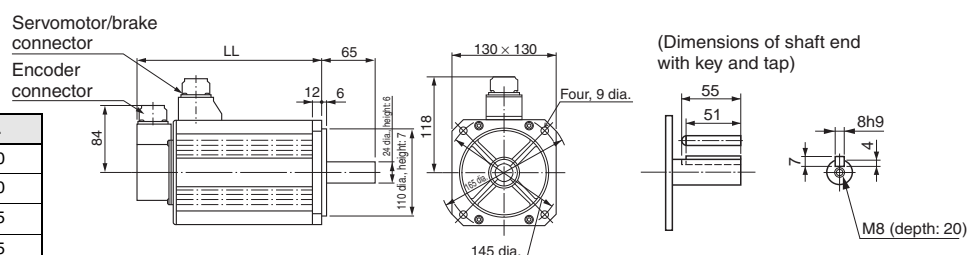
R88M-G4K030T (-S2)

R88M-G5K030T (-S2)

R88M-G4K030T-B (S2)

R88M-G5K030T-B (S2)

Model	LL
R88M-G4K030T	240
R88M-G5K030T	280
R88M-G4K030T-B	265
R88M-G5K030T-B	305



Note: The standard models have a straight shaft.

A model with a key and tap is indicated by adding "S2" to the end of the model number.

3,000-r/min Flat Servomotors

- 100 W/200 W/400 W

INC

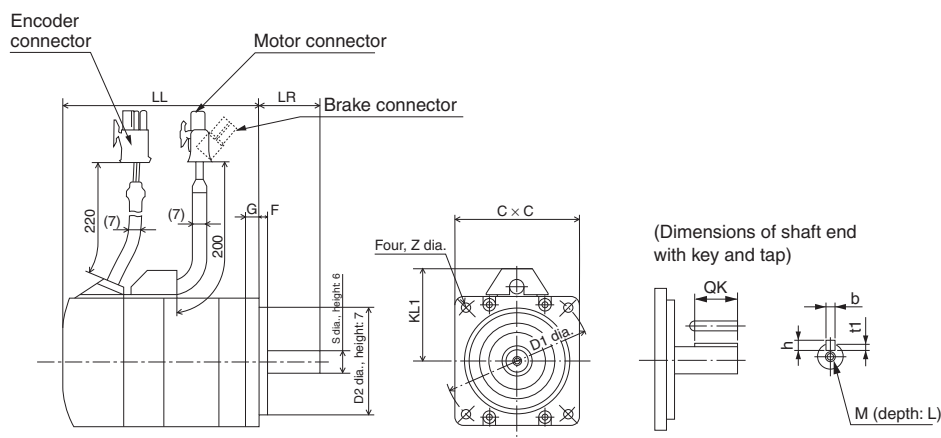
R88M-GP10030L (-S2)
R88M-GP20030L (-S2)
R88M-GP40030L (-S2)
R88M-GP10030H (-S2)
R88M-GP20030H (-S2)
R88M-GP40030H (-S2)
R88M-GP10030L-B (S2)
R88M-GP20030L-B (S2)
R88M-GP40030L-B (S2)
R88M-GP10030H-B (S2)
R88M-GP20030H-B (S2)
R88M-GP40030H-B (S2)

ABS

R88M-GP10030S (-S2)
R88M-GP20030S (-S2)
R88M-GP40030S (-S2)
R88M-GP10030T (-S2)
R88M-GP20030T (-S2)
R88M-GP40030T (-S2)
R88M-GP10030S-B (S2)
R88M-GP20030S-B (S2)
R88M-GP40030S-B (S2)
R88M-GP10030T-B (S2)
R88M-GP20030T-B (S2)
R88M-GP40030T-B (S2)

Model	LL	LR	S	D1	D2	C	F	G	KL1	Z	QK	b	h	t1	M	L
R88M-GP10030L R88M-GP10030H	60.5	25	8	70	50	60	3	7	43	4.5	12.5	3h9	3	1.8	M3	6
R88M-GP10030S R88M-GP10030T	87.5															
R88M-GP20030L R88M-GP20030H	67.5	30	11	90	70	80	5	8	53	5.5	18	4h9	4	2.5	M4	8
R88M-GP20030S R88M-GP20030T	94.5															
R88M-GP40030L R88M-GP40030H	82.5		14								22.5	5h9	5	3.0	M5	10
R88M-GP40030S R88M-GP40030T	109.5															
R88M-GP10030L-B R88M-GP10030H-B	84.5	25	8	70	50	60	3	7	43	4.5	12.5	3h9	3	1.8	M3	6
R88M-GP10030S-B R88M-GP10030T-B	111.5															
R88M-GP20030L-B R88M-GP20030H-B	100	30	11	90	70	80	5	8	53	5.5	18	4h9	4	2.5	M4	8
R88M-GP20030S-B R88M-GP20030T-B	127															
R88M-GP40030L-B R88M-GP40030H-B	115		14								22.5	5h9	5	3.0	M5	10
R88M-GP40030S-B R88M-GP40030T-B	142															

Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number.



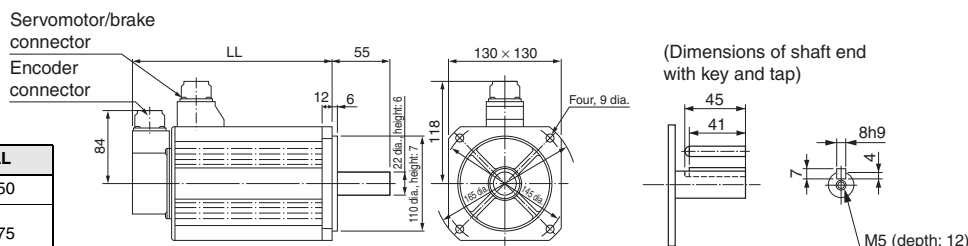
2,000-r/min Cylindrical Servomotors

• 200 VAC: 1 kW/1.5 kW

ABS

R88M-G1K020T (-S2)
R88M-G1K520T (-S2)
R88M-G1K020T-B (S2)
R88M-G1K520T-B (S2)

Model	LL
R88M-G1K020T	150
R88M-G1K520T	175
R88M-G1K020T-B	
R88M-G1K520T-B	200



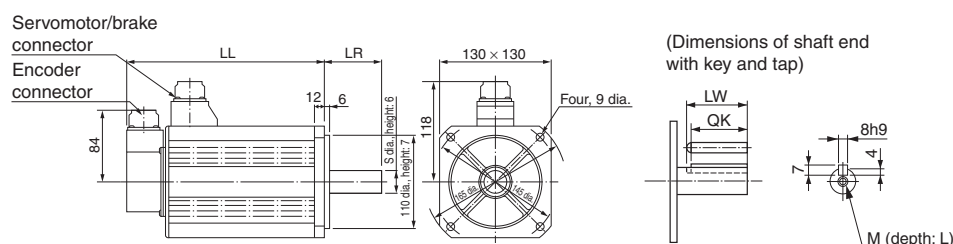
Note: The standard models have a straight shaft.
A model with a key and tap is indicated by adding "S2" to the end of the model number.

• 200 VAC: 2 kW/3 kW

ABS

R88M-G2K020T (-S2)
R88M-G3K020T (-S2)
R88M-G2K020T-B (S2)
R88M-G3K020T-B (S2)

Model	LL	LR	S	LW	QK	M	L
R88M-G2K020T	200	55	22	45	41	M5	12
R88M-G3K020T	250	65	24	55	51	M8	20
R88M-G2K020T-B	225	55	22	45	41	M5	12
R88M-G3K020T-B	275	65	24	55	51	M8	20



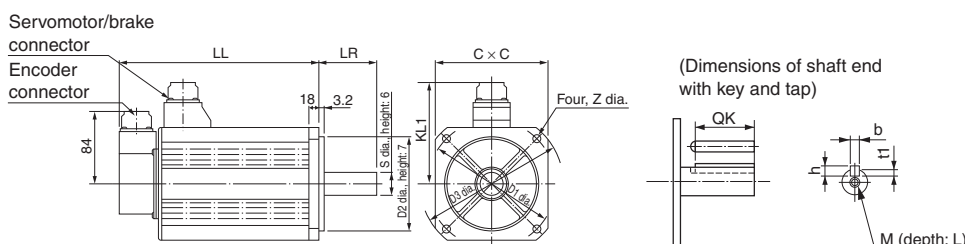
Note: The standard models have a straight shaft.
A model with a key and tap is indicated by adding "S2" to the end of the model number.

• 200 VAC : 4 kW/5 kW

ABS

R88M-G4K020T (-S2)
R88M-G5K020T (-S2)
R88M-G4K020T-B (S2)
R88M-G5K020T-B (S2)

Model	LL	LR	S	D1	D2	C	D3	KL1	Z	QK	b	h	t1	M	L
R88M-G4K020T	242	65	28	165	130	150	190	128	11	51	8h9	7	4	M8	20
R88M-G5K020T	225	70	35	200	114.3	176	233	143	13.5	50	10h9	8	5	M12	25
R88M-G4K020T-B	267	65	28	165	130	150	190	128	11	51	8h9	7	4	M8	20
R88M-G5K020T-B	250	70	35	200	114.3	176	233	143	13.5	50	10h9	8	5	M12	25



Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

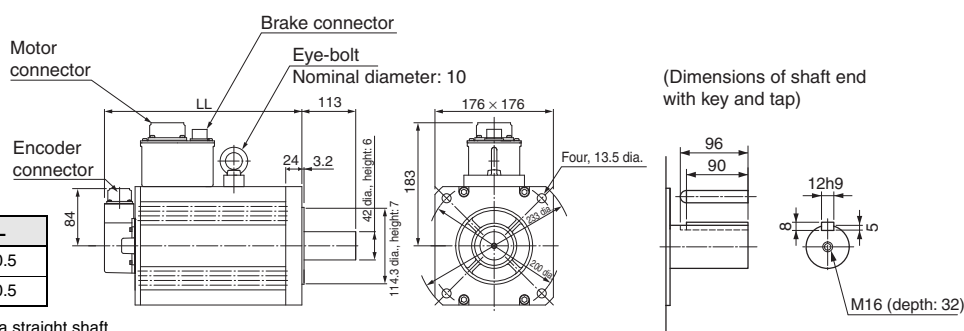
1,500-r/min Cylindrical Servomotors

• 7.5 kW

ABS

R88M-G7K515T (-S2)
R88M-G7K515T-B (S2)

Model	LL
R88M-G7K515T	340.5
R88M-G7K515T-B	380.5



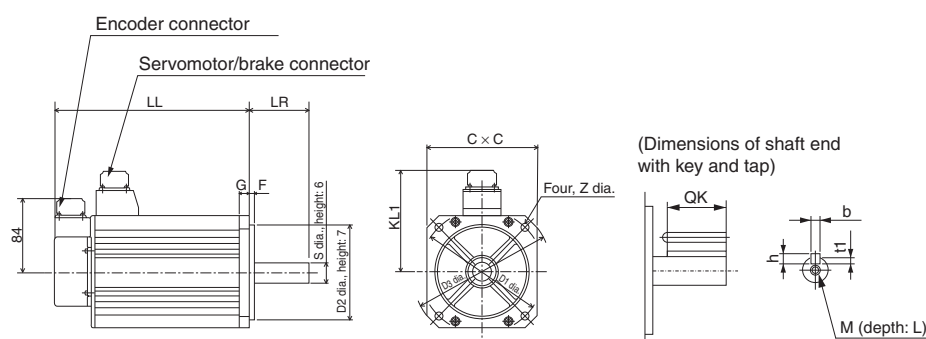
Note: The standard models have a straight shaft.
A model with a key and tap is indicated by adding "S2" to the end of the model number.

1,000-r/min Cylindrical Servomotors

• 900 W/2 kW

ABS

R88M-G90010T (-S2)
R88M-G2K010T (-S2)
R88M-G90010T-B (S2)
R88M-G2K010T-B (S2)



Model	LL	LR	S	D1	D2	C	D3	F	G	KL1	Z	QK	b	h	t1	M	L
R88M-G90010T	175	70	22	145	110	130	165	6	12	118	9	41	8h9	7	4	M5	12
R88M-G2K010T	182	80	35	200	114.3	176	233	3.2	18	143	13.5	50	10h9	8	5	M12	25
R88M-G90010T-B	200	70	22	145	110	130	165	6	12	118	9	41	8h9	7	4	M5	12
R88M-G2K010T-B	207	80	35	200	114.3	176	233	3.2	18	143	13.5	50	10h9	8	5	M12	25

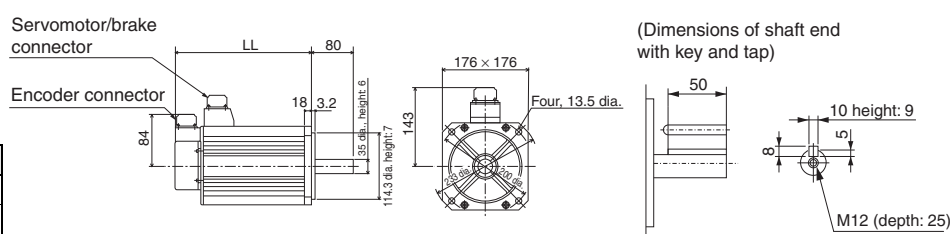
Note: The standard models have a straight shaft. A model with a key and tap is indicated by adding "S2" to the end of the model number.

• 3 kW

ABS

R88M-G3K010T (-S2)
R88M-G3K010T-B (S2)

Model	LL
R88M-G3K010T	222
R88M-G3K010T-B	271



Note: The standard models have a straight shaft.
A model with a key and tap is indicated by adding "S2" to the end of the model number.

● Decelerators

3,000-r/min Cylindrical Servomotors

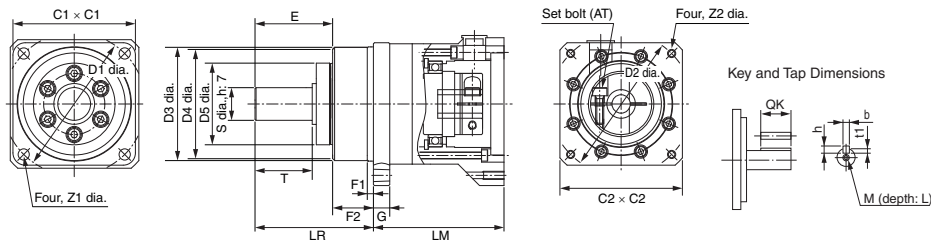
• Backlash: 3 Arcminutes Max.

Model			Dimensions (mm)												
			LM	LR	C1	C2	D1	D2	D3	D4	D5	E	F1	F2	
50 W	1/5	R88G-HPG11A05100B	39.5	42	40	40×40	46	46	40.0	39.5	29	27	2.2	15	
	1/9	R88G-HPG11A09050B	39.5	42	40	40×40	46	46	40.0	39.5	29	27	2.2	15	
	1/21	R88G-HPG14A21100B	64.0	58	60	60×60	70	46	56.0	55.5	40	37	2.5	21	
	1/33	R88G-HPG14A33050B	64.0	58	60	60×60	70	46	56.0	55.5	40	37	2.5	21	
	1/45	R88G-HPG14A45050B	64.0	58	60	60×60	70	46	56.0	55.5	40	37	2.5	21	
100 W	1/5	R88G-HPG11A05100B	39.5	42	40	40×40	46	46	40.0	39.5	29	27	2.2	15	
	1/11	R88G-HPG14A11100B	64.0	58	60	60×60	70	46	56.0	55.5	40	37	2.5	21	
	1/21	R88G-HPG14A21100B	64.0	58	60	60×60	70	46	56.0	55.5	40	37	2.5	21	
	1/33	R88G-HPG20A33100B	66.5	80	90	55 dia.	105	46	85.0	84.0	59	53	7.5	27	
	1/45	R88G-HPG20A45100B	66.5	80	90	55 dia.	105	46	85.0	84.0	59	53	7.5	27	
200 W	1/5	R88G-HPG14A05200B	64.0	58	60	60×60	70	46	56.0	55.5	40	37	2.5	21	
	1/11	R88G-HPG14A11200B	64.0	58	60	60×60	70	46	56.0	55.5	40	37	2.5	21	
	1/21	R88G-HPG20A21200B	71.0	80	90	89 dia.	105	70	85.0	84.0	59	53	7.5	27	
	1/33	R88G-HPG20A33200B	71.0	80	90	89 dia.	105	70	85.0	84.0	59	53	7.5	27	
	1/45	R88G-HPG20A45200B	71.0	80	90	89 dia.	105	70	85.0	84.0	59	53	7.5	27	
400 W	1/5	R88G-HPG14A05400B	64.0	58	60	60×60	70	70	56.0	55.5	40	37	2.5	21	
	1/11	R88G-HPG20A11400B	71.0	80	90	89 dia.	105	70	85.0	84.0	59	53	7.5	27	
	1/21	R88G-HPG20A21400B	71.0	80	90	89 dia.	105	70	85.0	84.0	59	53	7.5	27	
	1/33	R88G-HPG32A33400B	104.0	133	120	122 dia.	135	70	115.0	114.0	84	98	12.5	35	
	1/45	R88G-HPG32A45400B	104.0	133	120	122 dia.	135	70	115.0	114.0	84	98	12.5	35	
750 W	1/5	R88G-HPG20A05750B	78.0	80	90	80×80	105	90	85.0	84.0	59	53	7.5	27	
	1/11	R88G-HPG20A11750B	78.0	80	90	80×80	105	90	85.0	84.0	59	53	7.5	27	
	1/21	R88G-HPG32A21750B	104.0	133	120	122 dia.	135	90	115.0	114.0	84	98	12.5	35	
	1/33	R88G-HPG32A33750B	104.0	133	120	122 dia.	135	90	115.0	114.0	84	98	12.5	35	
	1/45	R88G-HPG32A45750B	104.0	133	120	122 dia.	135	90	115.0	114.0	84	98	12.5	35	
1 kW	1/5	R88G-HPG32A051K0B	104	133	120	122 dia.	135	100	115	114	84	98	12.5	35	
	1/11	R88G-HPG32A111K0B	104	133	120	122 dia.	135	100	115	114	84	98	12.5	35	
	1/21	R88G-HPG32A211K0B	104	133	120	122 dia.	135	100	115	114	84	98	12.5	35	
	1/33	R88G-HPG32A331K0B	104	133	120	122 dia.	135	100	115	114	84	98	12.5	35	
	1/45	R88G-HPG50A451K0B	123	156	170	170 dia.	190	100	165	163	122	103	12.0	53	
1.5 kW	1/5	R88G-HPG32A052K0B	110	133	120	135 dia.	135	115	115	114	84	98	12.5	35	
	1/11	R88G-HPG32A112K0B	110	133	120	135 dia.	135	115	115	114	84	98	12.5	35	
	1/21	R88G-HPG32A211K5B	110	133	120	135 dia.	135	115	115	114	84	98	12.5	35	
	1/33	R88G-HPG50A332K0B	123	156	170	170 dia.	190	115	165	163	122	103	12.0	53	
	1/45	R88G-HPG50A451K5B	123	156	170	170 dia.	190	115	165	163	122	103	12.0	53	
2 kW	1/5	R88G-HPG32A052K0B	110	133	120	135 dia.	135	115	115	114	84	98	12.5	35	
	1/11	R88G-HPG32A112K0B	110	133	120	135 dia.	135	115	115	114	84	98	12.5	35	
	1/21	R88G-HPG50A212K0B	123	156	170	170 dia.	190	115	165	163	122	103	12.0	53	
	1/33	R88G-HPG50A332K0B	123	156	170	170 dia.	190	115	165	163	122	103	12.0	53	
3 kW	1/5	R88G-HPG32A053K0B	107	133	120	130×130	135	145	115	114	84	98	12.5	35	
	1/11	R88G-HPG50A113K0B	123	156	170	170 dia.	190	145	165	163	122	103	12.0	53	
	1/21	R88G-HPG50A213K0B	123	156	170	170 dia.	190	145	165	163	122	103	12.0	53	
4 kW	1/5	R88G-HPG32A054K0B	129	133	120	130×130	135	145	115	114	84	98	12.5	35	
	1/11	R88G-HPG50A115K0B	149	156	170	130×130	190	145	165	163	122	103	12.0	53	
5 kW	1/5	R88G-HPG50A055K0B	149	156	170	130×130	190	145	165	163	122	103	12.0	53	
	1/11	R88G-HPG50A115K0B	149	156	170	130×130	190	145	165	163	122	103	12.0	53	

Note: 1. The standard models have a straight shaft.

A model with a key and tap is indicated by adding "J" to the end of the model number.

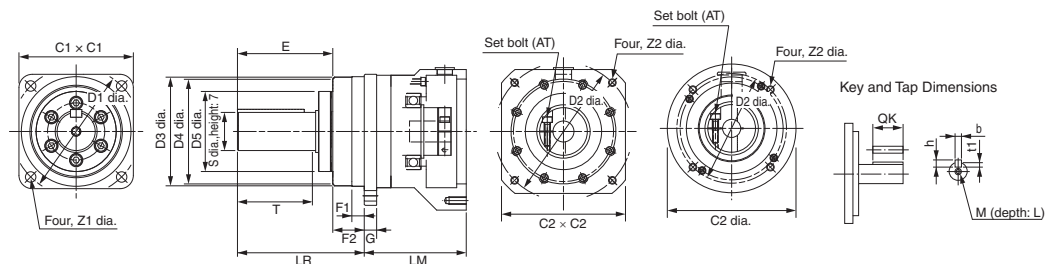
(50 to 750 W)



	Dimensions (mm)														
	G	S	T	Z1	Z2	AT ¹	Key dimensions				Tap dimensions				
							QK	b	h	t1	M	L			
	5	8	20	3.4	M4×9	M3	15	3	3	1.8	M3	6	R88G-HPG11A05100B	1/5	50 W
	5	8	20	3.4	M4×9	M3	15	3	3	1.8	M3	6	R88G-HPG11A09050B	1/9	
	8	16	28	5.5	M4×10	M3	25	5	5	3	M4	8	R88G-HPG14A21100B	1/21	
	8	16	28	5.5	M4×10	M3	25	5	5	3	M4	8	R88G-HPG14A33050B	1/33	
	8	16	28	5.5	M4×10	M3	25	5	5	3	M4	8	R88G-HPG14A45050B	1/45	
	5	8	20	3.4	M4×10	M3	15	3	3	1.8	M3	6	R88G-HPG11A05100B	1/5	100 W
	8	16	28	5.5	M4×9	M3	25	5	5	3	M4	8	R88G-HPG14A11100B	1/11	
	8	16	28	5.5	M4×10	M3	25	5	5	3	M4	8	R88G-HPG14A21100B	1/21	
	10	25	42	9.0	M4×10	M4	36	8	7	4.0	M6	12	R88G-HPG20A33100B	1/33	
	10	25	42	9.0	M4×10	M4	36	8	7	4.0	M6	12	R88G-HPG20A45100B	1/45	
	8	16	28	5.5	M4×10	M4	25	5	5	3	M4	8	R88G-HPG14A05200B	1/5	200 W
	8	16	28	5.5	M4×10	M4	25	5	5	3	M4	8	R88G-HPG14A11200B	1/11	
	10	25	42	9.0	M4×10	M4	36	8	7	4.0	M6	12	R88G-HPG20A21200B	1/21	
	10	25	42	9.0	M4×10	M4	36	8	7	4.0	M6	12	R88G-HPG20A33200B	1/33	
	10	25	42	9.0	M4×10	M4	36	8	7	4.0	M6	12	R88G-HPG20A45200B	1/45	
	8	16	28	5.5	M4×10	M4	25	5	5	3	M4	8	R88G-HPG14A05400B	1/5	400 W
	10	25	42	9.0	M4×10	M4	36	8	7	4.0	M6	12	R88G-HPG20A11400B	1/11	
	10	25	42	9.0	M4×10	M4	36	8	7	4.0	M6	12	R88G-HPG20A21400B	1/21	
	13	40	82	11.0	M4×10	M4	70	12	8	5.0	M10	20	R88G-HPG32A33400B	1/33	
	13	40	82	11.0	M4×10	M4	70	12	8	5.0	M10	20	R88G-HPG32A45400B	1/45	
	10	25	42	9.0	M5×10	M4	36	8	7	4.0	M6	12	R88G-HPG20A05750B	1/5	750 W
	10	25	42	9.0	M5×12	M4	36	8	7	4.0	M6	12	R88G-HPG20A11750B	1/11	
	13	40	82	11.0	M5×12	M6	70	12	8	5.0	M10	20	R88G-HPG32A21750B	1/21	
	13	40	82	11.0	M5×12	M6	70	12	8	5.0	M10	20	R88G-HPG32A33750B	1/33	
	13	40	82	11.0	M5×12	M6	70	12	8	5.0	M10	20	R88G-HPG32A45750B	1/45	
	13	40	82	11	M6×12	M6	70	12	8	5.0	M10	20	R88G-HPG32A051K0B	1/5	1 kW
	13	40	82	11	M6×12	M6	70	12	8	5.0	M10	20	R88G-HPG32A111K0B	1/11	
	13	40	82	11	M6×12	M6	70	12	8	5.0	M10	20	R88G-HPG32A211K0B	1/21	
	13	40	82	11	M6×12	M6	70	12	8	5.0	M10	20	R88G-HPG32A331K0B	1/33	
	16	50	82	14	M6×10	M6	70	14	9	5.5	M10	20	R88G-HPG50A451K0B	1/45	
	13	40	82	11	M8×10	M6	70	12	8	5.0	M10	20	R88G-HPG32A052K0B	1/5	1.5 kW
	13	40	82	11	M8×10	M6	70	12	8	5.0	M10	20	R88G-HPG32A112K0B	1/11	
	13	40	82	11	M8×10	M6	70	12	8	5.0	M10	20	R88G-HPG32A211K5B	1/21	
	16	50	82	14	M8×10	M6	70	14	9	5.5	M10	20	R88G-HPG50A332K0B	1/33	
	16	50	82	14	M8×10	M6	70	14	9	5.5	M10	20	R88G-HPG50A451K5B	1/45	
	13	40	82	11	M8×10	M6	70	12	8	5.0	M10	20	R88G-HPG32A052K0B	1/5	2 kW
	13	40	82	11	M8×10	M6	70	12	8	5.0	M10	20	R88G-HPG32A112K0B	1/11	
	16	50	82	14	M8×10	M6	70	14	9	5.5	M10	20	R88G-HPG50A212K0B	1/21	
	16	50	82	14	M8×10	M6	70	14	9	5.5	M10	20	R88G-HPG50A332K0B	1/33	
	13	40	82	11	M8×18	M6	70	12	8	5.0	M10	20	R88G-HPG32A053K0B	1/5	
	16	50	82	14	M8×16	M6	70	14	9	5.5	M10	20	R88G-HPG50A113K0B	1/11	3 kW
	16	50	82	14	M8×16	M6	70	14	9	5.5	M10	20	R88G-HPG50A213K0B	1/21	
	13	40	82	11	M8×25	M6	70	12	8	5.0	M10	20	R88G-HPG32A054K0B	1/5	
	16	50	82	14	M8×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A115K0B	1/11	4 kW
	16	50	82	14	M8×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A055K0B	1/5	
	16	50	82	14	M8×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A115K0B	1/11	

*1. This is the set bolt.

(1 to 5 kW)



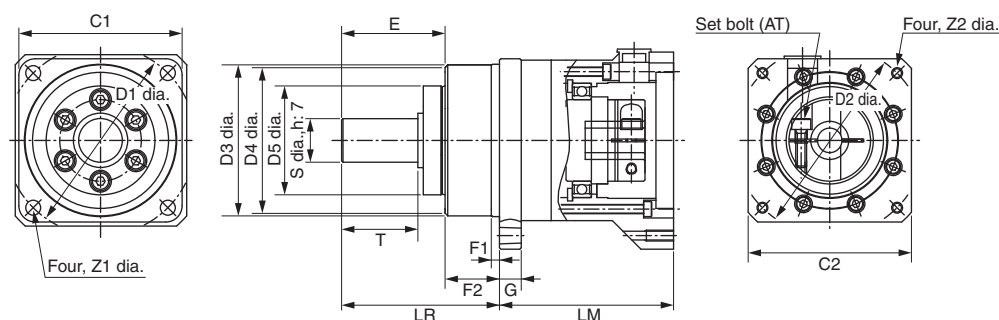
3,000-r/min Flat Servomotors

• Backlash: 3 Arcminutes Max.

Model			Dimensions (mm)												
			LM	LR	C1	C2	D1	D2	D3	D4	D5	E	F1	F2	
100 W	1/5	R88G-HPG11A05100PB	39.5	42	40	60×60	46	70	40.0	39.5	29	27	2.2	15	
	1/11	R88G-HPG14A11100PB	64.0	58	60	60×60	70	70	56.0	55.5	40	37	2.5	21	
	1/21	R88G-HPG14A21100PB	64.0	58	60	60×60	70	70	56.0	55.5	40	37	2.5	21	
	1/33	R88G-HPG20A33100PB	71.0	80	90	89 dia.	105	70	85.0	84.0	59	53	7.5	27	
	1/45	R88G-HPG20A45100PB	71.0	80	90	89 dia.	105	70	85.0	84.0	59	53	7.5	27	
200 W	1/5	R88G-HPG14A05200PB	65.0	58	60	80×80	70	90	56.0	55.5	40	37	2.5	21	
	1/11	R88G-HPG20A11200PB	78.0	80	90	80×80	105	90	85.0	84.0	59	53	7.5	27	
	1/21	R88G-HPG20A21200PB	78.0	80	90	80×80	105	90	85.0	84.0	59	53	7.5	27	
	1/33	R88G-HPG20A33200PB	78.0	80	90	80×80	105	90	85.0	84.0	59	53	7.5	27	
	1/45	R88G-HPG20A45200PB	78.0	80	90	80×80	105	90	85.0	84.0	59	53	7.5	27	
400 W	1/5	R88G-HPG20A05400PB	78.0	80	90	80×80	105	90	85.0	84.0	59	53	7.5	27	
	1/11	R88G-HPG20A11400PB	78.0	80	90	80×80	105	90	85.0	84.0	59	53	7.5	27	
	1/21	R88G-HPG20A21400PB	78.0	80	90	80×80	105	90	85.0	84.0	59	53	7.5	27	
	1/33	R88G-HPG32A33400PB	104.0	133	120	122 dia.	135	90	115.0	114.0	84	98	12.5	35	
	1/45	R88G-HPG32A45400PB	104.0	133	120	122 dia.	135	90	115.0	114.0	84	98	12.5	35	

Note: 1. The standard models have a straight shaft.

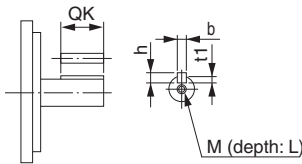
A model with a key and tap is indicated by adding "J" to the end of the model number.



	Dimensions (mm)												Model		
	G	S	T	Z1	Z2	AT ^{*1}	Key dimensions				Tap dimensions				
							QK	b	h	t1	M	L			
	5	8	20	3.4	M4×9	M3	15	3	3	1.8	M3	6	R88G-HPG11A05100PB	1/5	100 W
	8	16	28	5.5	M4×10	M3	25	5	5	3.0	M4	8	R88G-HPG14A111100PB	1/11	
	8	16	28	5.5	M4×10	M3	25	5	5	3.0	M4	8	R88G-HPG14A211100PB	1/21	
	10	25	42	9.0	M4×10	M3	36	8	7	4.0	M6	12	R88G-HPG20A33100PB	1/33	
	10	25	42	9.0	M4×10	M3	36	8	7	4.0	M6	12	R88G-HPG20A45100PB	1/45	
	8	16	28	5.5	M5×12	M4	25	5	5	3.0	M4	8	R88G-HPG14A05200PB	1/5	200 W
	10	25	42	9.0	M5×12	M4	36	8	7	4.0	M6	12	R88G-HPG20A11200PB	1/11	
	10	25	42	9.0	M5×12	M4	36	8	7	4.0	M6	12	R88G-HPG20A21200PB	1/21	
	10	25	42	9.0	M5×12	M4	36	8	7	4.0	M6	12	R88G-HPG20A33200PB	1/33	
	10	25	42	9.0	M5×12	M4	36	8	7	4.0	M6	12	R88G-HPG20A45200PB	1/45	
	10	25	42	9.0	M5×12	M4	36	8	7	4.0	M6	12	R88G-HPG20A05400PB	1/5	400 W
	10	25	42	9.0	M5×12	M4	36	8	7	4.0	M6	12	R88G-HPG20A11400PB	1/11	
	10	25	42	9.0	M5×12	M4	36	8	7	4.0	M6	12	R88G-HPG20A21400PB	1/21	
	13	40	82	11.0	M5×12	M6	70	12	8	5.0	M10	20	R88G-HPG32A33400PB	1/33	
	13	40	82	11.0	M5×12	M6	70	12	8	5.0	M10	20	R88G-HPG32A45400PB	1/45	

*1. This is the set bolt.

Key and Tap Dimensions



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

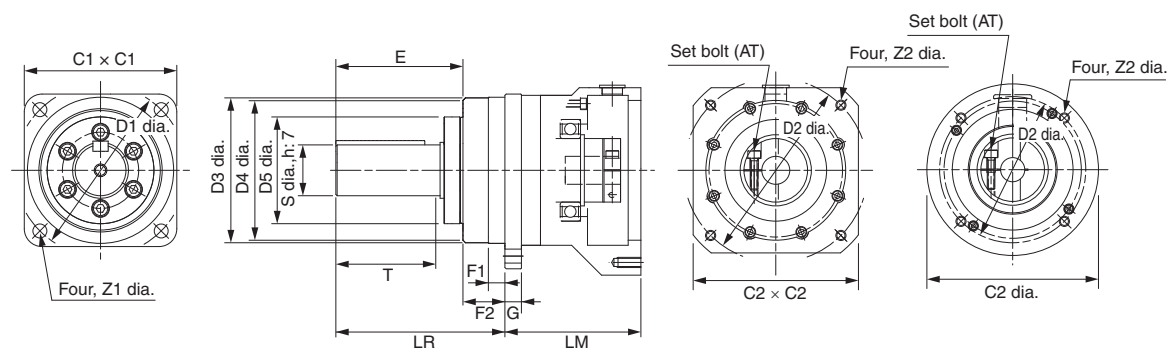
2,000-r/min Cylindrical Servomotors

• Backlash: 3 Arcminutes Max.

Model			Dimensions (mm)												
			LM	LR	C1	C2	D1	D2	D3	D4	D5	E	F1	F2	
1 kW	1/5	R88G-HPG32A053K0B	107	133	120	130×130	135	145	115	114	84	98	12.5	35	
	1/11	R88G-HPG32A112K0SB	107	133	120	130×130	135	145	115	114	84	98	12.5	35	
	1/21	R88G-HPG32A211K0SB	107	133	120	130×130	135	145	115	114	84	98	12.5	35	
	1/33	R88G-HPG50A332K0SB	123	156	170	170 dia.	190	145	165	163	122	103	12.0	53	
	1/45	R88G-HPG50A451K0SB	123	156	170	170 dia.	190	145	165	163	122	103	12.0	53	
1.5 kW	1/5	R88G-HPG32A053K0B	107	133	120	130×130	135	145	115	114	84	98	12.5	35	
	1/11	R88G-HPG32A112K0SB	107	133	120	130×130	135	145	115	114	84	98	12.5	35	
	1/21	R88G-HPG50A213K0B	123	156	170	170 dia.	190	145	165	163	122	103	12.0	53	
	1/33	R88G-HPG50A332K0SB	123	156	170	170 dia.	190	145	165	163	122	103	12.0	53	
2 kW	1/5	R88G-HPG32A053K0B	107	133	120	130×130	135	145	115	114	84	98	12.5	35	
	1/11	R88G-HPG32A112K0SB	107	133	120	130×130	135	145	115	114	84	98	12.5	35	
	1/21	R88G-HPG50A213K0B	123	156	170	170 dia.	190	145	165	163	122	103	12.0	53	
	1/33	R88G-HPG50A332K0SB	123	156	170	170 dia.	190	145	165	163	122	103	12.0	53	
3 kW	1/5	R88G-HPG32A054K0B	129	133	120	130×130	135	145	115	114	84	98	12.5	35	
	1/11	R88G-HPG50A115K0B	149	156	170	130×130	190	145	165	163	122	103	12.0	53	
	1/21	R88G-HPG50A213K0SB	149	156	170	130×130	190	145	165	163	122	103	12.0	53	
	1/25	R88G-HPG65A253K0SB	231	222	230	130×130	260	145	220	214	168	165	12.0	57	
4 kW	1/5	R88G-HPG50A054K0SB	149	156	170	180×180	190	165	165	163	122	103	12.0	53	
	1/11	R88G-HPG50A114K0SB	149	156	170	180×180	190	165	165	163	122	103	12.0	53	
	1/20	R88G-HPG65A204K0SB	231	222	230	180×180	260	165	220	214	168	165	12.0	57	
	1/25	R88G-HPG65A254K0SB	231	222	230	180×180	260	165	220	214	168	165	12.0	57	
5 kW	1/5	R88G-HPG50A055K0SB	149	156	170	180×180	190	200	165	163	122	103	12.0	53	
	1/11	R88G-HPG50A115K0SB	149	156	170	180×180	190	200	165	163	122	103	12.0	53	
	1/20	R88G-HPG65A205K0SB	231	222	230	180×180	260	200	220	214	168	165	12.0	57	
	1/25	R88G-HPG65A255K0SB	231	222	230	180×180	260	200	220	214	168	165	12.0	57	
7.5 kW	1/5	R88G-HPG65A057K5SB	184.5	222	230	180×180	260	200	220	214	168	165	12.0	57	
	1/12	R88G-HPG65A127K5SB	254.5	222	230	180×180	260	200	220	214	168	165	12.0	57	

Note: The standard models have a straight shaft with a key.

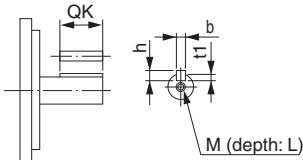
A model with a key and tap is indicated by adding "J" to the end of the model number.



	Dimensions (mm)												Model		
	G	S	T	Z1	Z2	AT *1	Key dimensions				Tap dimensions				
							QK	b	h	t1	M	L			
	13	40	82	11	M8×18	M6	70	12	8	5.0	M10	20	R88G-HPG32A053K0B	1/5	1 kW
	13	40	82	11	M8×18	M6	70	12	8	5.0	M10	20	R88G-HPG32A112K0SB	1/11	
	13	40	82	11	M8×18	M6	70	12	8	5.0	M10	20	R88G-HPG32A211K0SB	1/21	
	16	50	82	14	M8×16	M6	70	14	9	5.5	M10	20	R88G-HPG50A332K0SB	1/33	
	16	50	82	14	M8×16	M6	70	14	9	5.5	M10	20	R88G-HPG50A451K0SB	1/45	
	13	40	82	11	M8×18	M6	70	12	8	5.0	M10	20	R88G-HPG32A053K0B	1/5	1.5 kW
	13	40	82	11	M8×18	M6	70	12	8	5.0	M10	20	R88G-HPG32A112K0SB	1/11	
	16	50	82	14	M8×16	M6	70	14	9	5.5	M10	20	R88G-HPG50A213K0B	1/21	
	16	50	82	14	M8×16	M6	70	14	9	5.5	M10	20	R88G-HPG50A332K0SB	1/33	
	13	40	82	11	M8×18	M6	70	12	8	5.0	M10	20	R88G-HPG32A053K0B	1/5	2 kW
	13	40	82	11	M8×18	M6	70	12	8	5.0	M10	20	R88G-HPG32A112K0SB	1/11	
	16	50	82	14	M8×16	M6	70	14	9	5.5	M10	20	R88G-HPG50A213K0B	1/21	
	16	50	82	14	M8×16	M6	70	14	9	5.5	M10	20	R88G-HPG50A332K0SB	1/33	
	13	40	82	11	M8×25	M6	70	12	8	5.0	M10	20	R88G-HPG32A054K0B	1/5	3 kW
	16	50	82	14	M8×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A115K0B	1/11	
	16	50	82	14	M8×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A213K0SB	1/21	
	25	80	130	18	M8×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A253K0SB	1/25	
	16	50	82	14	M10×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A054K0SB	1/5	4 kW
	16	50	82	14	M10×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A114K0SB	1/11	
	25	80	130	18	M10×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A204K0SB	1/20	
	25	80	130	18	M10×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A254K0SB	1/25	
	16	50	82	14	M12×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A055K0SB	1/5	5 kW
	16	50	82	14	M12×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A115K0SB	1/11	
	25	80	130	18	M12×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A205K0SB	1/20	
	25	80	130	18	M12×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A255K0SB	1/25	
	25	80	130	18	M12×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A057K5SB	1/5	7.5 kW
	25	80	130	18	M12×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A127K5SB	1/12	

*1. This is the set bolt.

Key and Tap Dimensions



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

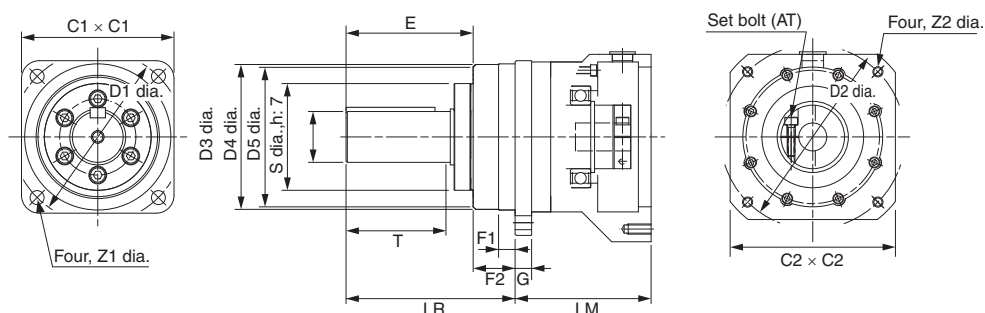
SMARTSTEP
Junior

1,000-r/min Cylindrical Servomotors

- Backlash: 3 Arcminutes Max.

Model			Dimensions (mm)												
			LM	LR	C1	C2	D1	D2	D3	D4	D5	E	F1	F2	
900 W	1/5	R88G-HPG32A05900TB	129	133	120	130×130	135	145	115	114	84	98	12.5	35	
	1/11	R88G-HPG32A11900TB	129	133	120	130×130	135	145	115	114	84	98	12.5	35	
	1/21	R88G-HPG50A21900TB	149	156	170	130×130	190	145	165	163	122	103	12.0	53	
	1/33	R88G-HPG50A33900TB	149	156	170	130×130	190	145	165	163	122	103	12.0	53	
2 kW	1/5	R88G-HPG32A052K0TB	129	133	120	180×180	135	200	115	114	84	98	12.5	35	
	1/11	R88G-HPG50A112K0TB	149	156	170	180×180	190	200	165	163	122	103	12.0	53	
	1/21	R88G-HPG50A212K0TB	149	156	170	180×180	190	200	165	163	122	103	12.0	53	
	1/25	R88G-HPG65A255K0SB	231	222	230	180×180	260	200	220	214	168	165	12.0	57	
3 kW	1/5	R88G-HPG50A055K0SB	149	156	170	180×180	190	200	165	163	122	103	12.0	53	
	1/11	R88G-HPG50A115K0SB	149	156	170	180×180	190	200	165	163	122	103	12.0	53	
	1/20	R88G-HPG65A205K0SB	231	222	230	180×180	260	200	220	214	168	165	12.0	57	
	1/25	R88G-HPG65A255K0SB	231	222	230	180×180	260	200	220	214	168	165	12.0	57	
4.5 kW	1/5	R88G-HPG50A054K5TB	149	156	170	180×180	190	200	165	163	122	103	12.0	53	
	1/12	R88G-HPG65A127K5SB	254.5	222	230	180×180	260	200	220	214	168	165	12.0	57	
	1/20	R88G-HPG65A204K5TB	254.5	222	230	180×180	260	200	220	214	168	165	12.0	57	
6 kW	1/5	R88G-HPG65A057K5SB	184.5	222	230	180×180	260	200	220	214	168	165	12.0	57	
	1/12	R88G-HPG65A127K5SB	254.5	222	230	180×180	260	200	220	214	168	165	12.0	57	

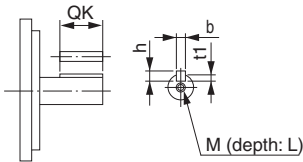
Note: The standard models have a straight shaft with a key.
A model with a key and tap is indicated by adding "J" to the end of the model number.



	Dimensions (mm)												Model		
	G	S	T	Z1	Z2	AT *1	Key dimensions				Tap dimensions				
							QK	b	h	t1	M	L			
	13	40	82	11	M8×25	M6	70	12	8	5.0	M10	20	R88G-HPG32A05900TB	1/5	900 W
	13	40	82	11	M8×25	M6	70	12	8	5.0	M10	20	R88G-HPG32A11900TB	1/11	
	16	50	82	14	M8×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A21900TB	1/21	
	16	50	82	14	M8×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A33900TB	1/33	
	13	40	82	11	M12×25	M6	70	12	8	5.0	M10	20	R88G-HPG32A052K0TB	1/5	2 kW
	16	50	82	14	M12×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A112K0TB	1/11	
	16	50	82	14	M12×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A212K0TB	1/21	
	25	80	130	18	M12×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A255K0SB	1/25	
	16	50	82	14	M12×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A055K0SB	1/5	3 kW
	16	50	82	14	M12×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A115K0SB	1/11	
	25	80	130	18	M12×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A205K0SB	1/20	
	25	80	130	18	M12×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A255K0SB	1/25	
	16	50	82	14	M12×25	M6	70	14	9	5.5	M10	20	R88G-HPG50A054K5TB	1/5	4.5 kW
	25	80	130	18	M12×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A127K5SB	1/12	
	25	80	130	18	M12×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A204K5TB	1/20	
	25	80	130	18	M12×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A057K5SB	1/5	6 kW
	25	80	130	18	M12×25	M8	110	22	14	9.0	M16	35	R88G-HPG65A127K5SB	1/12	

*1. This is the set bolt.

Key and Tap Dimensions



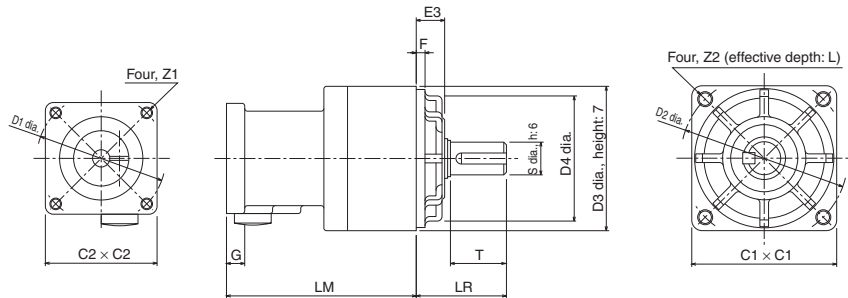
Concepts
New Product Information/ Motion Network Lineup
Controller Features
Servo System Features
CX-Drive/ Motor Selection Program
Servomotors, and Servo Drives Selection Guide
Controllers Position Control Units
Controllers Motion Control Units
OMNUC G
OMNUC W
SMARTSTEP Junior

3,000-r/min Cylindrical Servomotors

• Backlash: 15 Arcminutes Max.

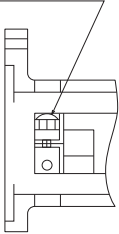
Model			Dimensions (mm)											
			LM	LR	C1	C2	D1	D2	D3	D4	E3	F	G	
50 W	1/5	R88G-VRSF05B100CJ	67.5	32	52	40	46	60	50	45	10	3	6	
	1/9	R88G-VRSF09B100CJ	67.5	32	52	40	46	60	50	45	10	3	6	
	1/15	R88G-VRSF15B100CJ	78.0	32	52	40	46	60	50	45	10	3	6	
	1/25	R88G-VRSF25B050CJ	78.0	32	52	40	46	60	50	45	10	3	6	
100 W	1/5	R88G-VRSF05B100CJ	67.5	32	52	40	46	60	50	45	10	3	6	
	1/9	R88G-VRSF09B100CJ	67.5	32	52	40	46	60	50	45	10	3	6	
	1/15	R88G-VRSF15B100CJ	78.0	32	52	40	46	60	50	45	10	3	6	
	1/25	R88G-VRSF25B100CJ	78.0	32	52	40	46	60	50	45	10	3	6	
200 W	1/5	R88G-VRSF05B200CJ	72.5	32	52	60	70	60	50	45	10	3	10	
	1/9	R88G-VRSF09C200CJ	89.5	50	78	60	70	90	70	62	17	3	8	
	1/15	R88G-VRSF15C200CJ	100.0	50	78	60	70	90	70	62	17	3	8	
	1/25	R88G-VRSF25C200CJ	100.0	50	78	60	70	90	70	62	17	3	8	
400 W	1/5	R88G-VRSF05C400CJ	89.5	50	78	60	70	90	70	62	17	3	8	
	1/9	R88G-VRSF09C400CJ	89.5	50	78	60	70	90	70	62	17	3	8	
	1/15	R88G-VRSF15C400CJ	100.0	50	78	60	70	90	70	62	17	3	8	
	1/25	R88G-VRSF25C400CJ	100.0	50	78	60	70	90	70	62	17	3	8	
750 W	1/5	R88G-VRSF05D750CJ	93.5	50	78	80	90	90	70	62	17	3	10	
	1/9	R88G-VRSF09D750CJ	97.5	61	98	80	90	115	90	75	18	5	10	
	1/15	R88G-VRSF15D750CJ	110.0	61	98	80	90	115	90	75	18	5	10	
	1/25	R88G-VRSF25D750CJ	110.0	61	98	80	90	115	90	75	18	5	10	

Note: The standard models have a straight shaft with a key.

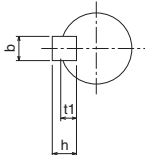
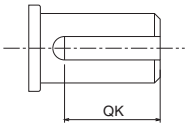


	Dimensions (mm)										Model		
	S	T	Z1	Z2	AT	L	Key dimensions						
							QK	b	h	t1			
	12	20	M4	M5	M3	12	16	4	4	2.5	R88G-VRSF05B100CJ	1/5	50 W
	12	20	M4	M5	M3	12	16	4	4	2.5	R88G-VRSF09B100CJ	1/9	
	12	20	M4	M5	M3	12	16	4	4	2.5	R88G-VRSF15B100CJ	1/15	
	12	20	M4	M5	M3	12	16	4	4	2.5	R88G-VRSF25B050CJ	1/25	
	12	20	M4	M5	M3	12	16	4	4	2.5	R88G-VRSF05B100CJ	1/5	100 W
	12	20	M4	M5	M3	12	16	4	4	2.5	R88G-VRSF09B100CJ	1/9	
	12	20	M4	M5	M3	12	16	4	4	2.5	R88G-VRSF15B100CJ	1/15	
	12	20	M4	M5	M3	12	16	4	4	2.5	R88G-VRSF25B100CJ	1/25	
	12	20	M5	M5	M4	12	16	4	4	2.5	R88G-VRSF05B200CJ	1/5	200 W
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF09C200CJ	1/9	
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF15C200CJ	1/15	
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF25C200CJ	1/25	
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF05C400CJ	1/5	400 W
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF09C400CJ	1/9	
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF15C400CJ	1/15	
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF25C400CJ	1/25	
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF05C750CJ	1/5	750 W
	24	40	M5	M8	M4	20	30	8	7	4	R88G-VRSF09D750CJ	1/9	
	24	40	M5	M8	M4	20	30	8	7	4	R88G-VRSF15D750CJ	1/15	
	24	40	M5	M8	M4	20	30	8	7	4	R88G-VRSF25D750CJ	1/25	

Set bolt (AT)



Key Dimensions



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

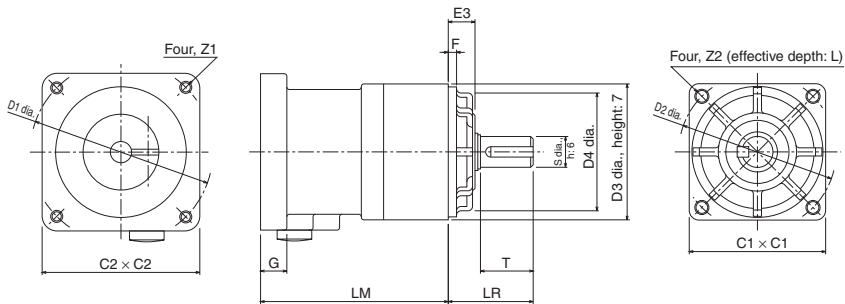
SMARTSTEP
Junior

3,000-r/min Flat Servomotors

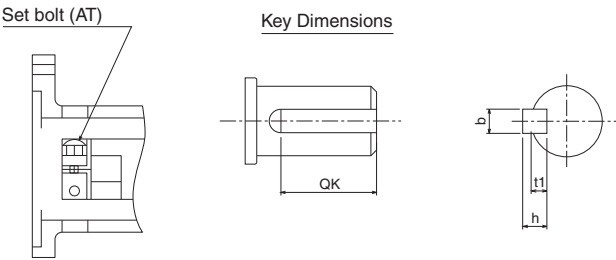
• Backlash: 15 Arcminutes Max.

Model			Dimensions (mm)											
			LM	LR	C1	C2	D1	D2	D3	D4	E3	F	G	
100 W	1/5	R88G-VRSF05B100PCJ	67.5	32	52	60	70	60	50	45	10	3	8	
	1/9	R88G-VRSF09B100PCJ	67.5	32	52	60	70	60	50	45	10	3	8	
	1/15	R88G-VRSF15B100PCJ	78.0	32	52	60	70	60	50	45	10	3	8	
	1/25	R88G-VRSF25B100PCJ	78.0	32	52	60	70	60	50	45	10	3	8	
200 W	1/5	R88G-VRSF05B200PCJ	72.5	32	52	80	90	60	50	45	10	3	12	
	1/9	R88G-VRSF09C200PCJ	89.5	50	78	80	90	90	70	62	17	3	12	
	1/15	R88G-VRSF15C200PCJ	100.0	50	78	80	90	90	70	62	17	3	12	
	1/25	R88G-VRSF25C200PCJ	100.0	50	78	80	90	90	70	62	17	3	12	
400 W	1/5	R88G-VRSF05C400PCJ	89.5	50	78	80	90	90	70	62	17	3	12	
	1/9	R88G-VRSF09C400PCJ	89.5	50	78	80	90	90	70	62	17	3	12	
	1/15	R88G-VRSF15C400PCJ	100.0	50	78	80	90	90	70	62	17	3	12	
	1/25	R88G-VRSF25C400PCJ	100.0	50	78	80	90	90	70	62	17	3	12	

Note: The standard models have a straight shaft with a key.



	Dimensions (mm)										Model		
	S	T	Z1	Z2	AT	L	Key dimensions						
							QK	b	h	t1			
	12	20	M4	M5	M3	12	16	4	4	2.5	R88G-VRSF05B100PCJ	1/5	100 W
	12	20	M4	M5	M3	12	16	4	4	2.5	R88G-VRSF09B100PCJ	1/9	
	12	20	M4	M5	M3	12	16	4	4	2.5	R88G-VRSF15B100PCJ	1/15	
	12	20	M4	M5	M3	12	16	4	4	2.5	R88G-VRSF25B100PCJ	1/25	
	12	20	M5	M5	M4	12	16	4	4	2.5	R88G-VRSF05B200PCJ	1/5	200 W
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF09C200PCJ	1/9	
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF15C200PCJ	1/15	
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF25C200PCJ	1/25	
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF05C400PCJ	1/5	400 W
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF09C400PCJ	1/9	
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF15C400PCJ	1/15	
	19	30	M5	M6	M4	20	22	6	6	3.5	R88G-VRSF25C400PCJ	1/25	



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

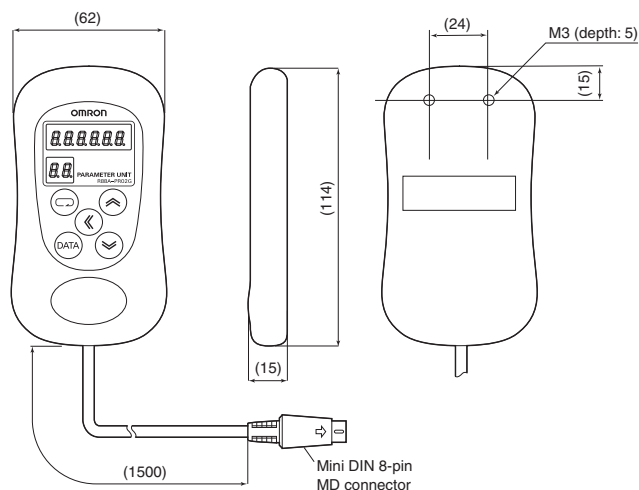
OMNUC G

OMNUC W

SMARTSTEP
Junior

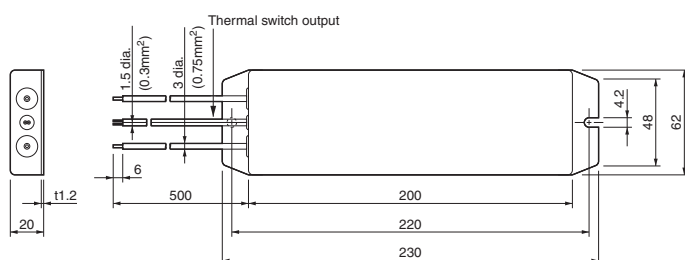
● Parameter Unit

R88A-PR02G

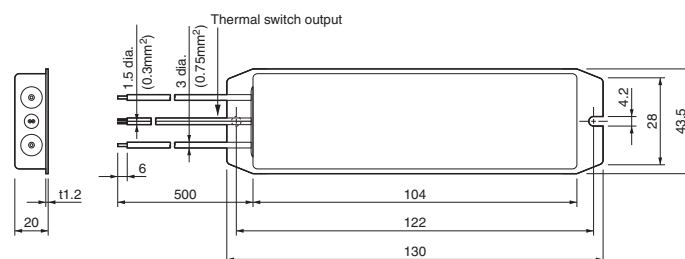


● External Regeneration Resistor

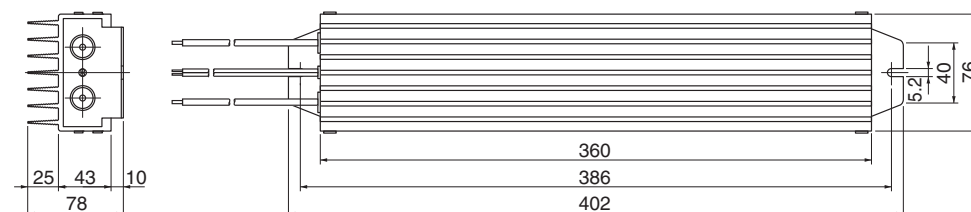
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R88A-RR08050S/-RR080100S

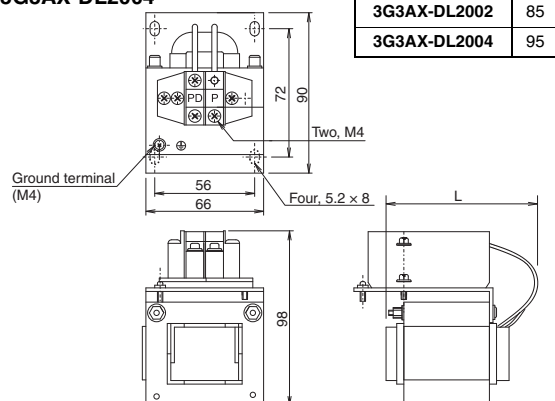


R88A-RR50020S

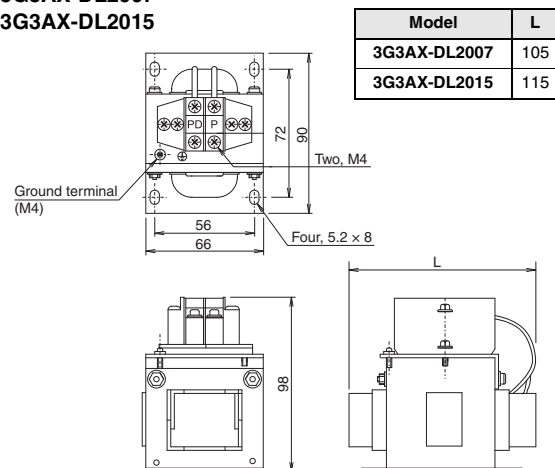


Reactor

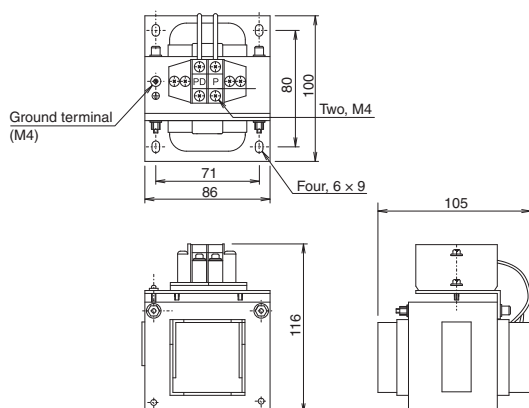
3G3AX-DL2002 3G3AX-DL2004



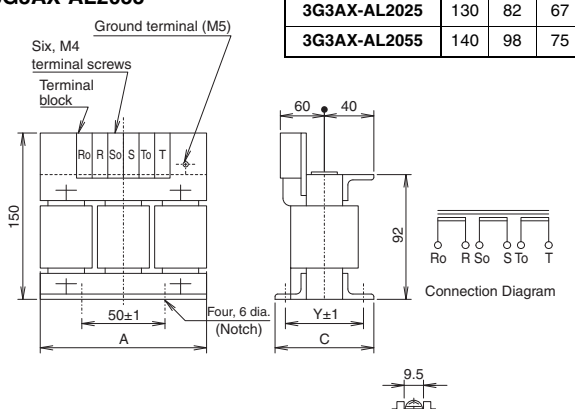
3G3AX-DL2007 3G3AX-DL2015



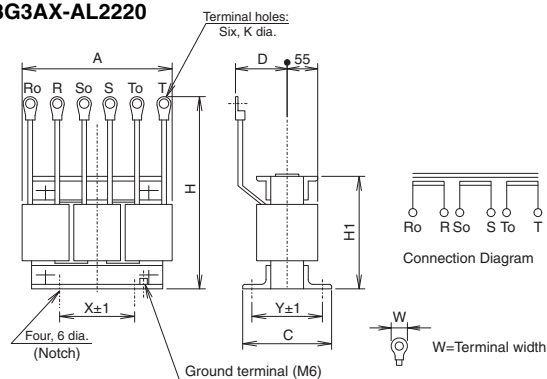
3G3AX-DL2022



3G3AX-AL2025 3G3AX-AL2055



3G3AX-AL2110 3G3AX-AL2220



Related Manuals

English Cat. No.	Japanese Cat. No.	Type	Name
I566	SBCE-353	R88M-G/R88D-GN□-ML2	OMNUC G-series AC Servomotors/Servo Drives with Built-in MECHATROLINK-II Communications User's Manual
—	SBCE-053	R7D-BP/R88M-GT/R7D-Z/ R7D-A/R88D-W	Motor Selection Program OMNUC G/W series SMARTSTEP2/Junior/A series CD-ROM
W453	SBCE-337	CXONE-AL□□C/D-V3	CX-Drive Operation Manual

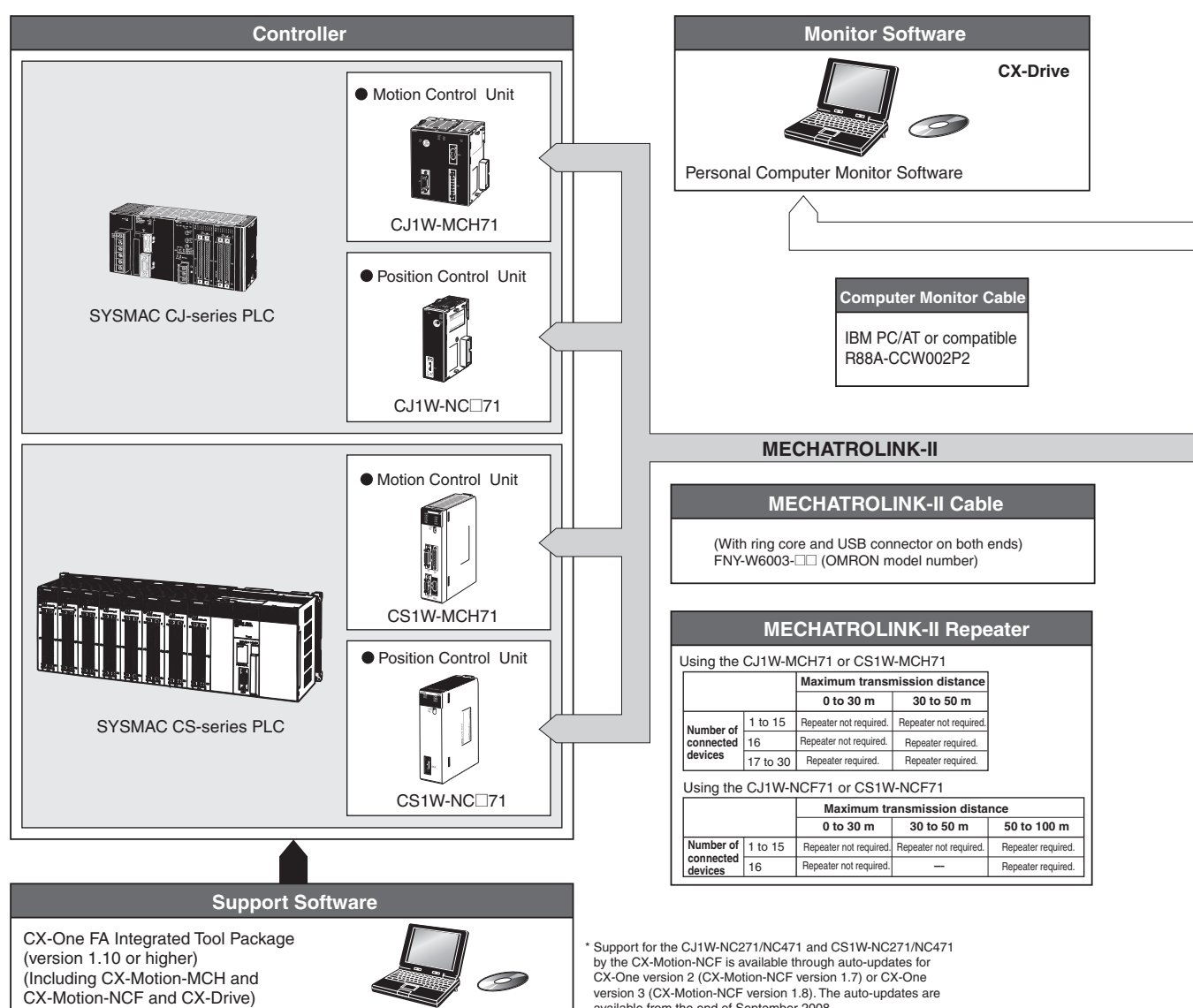
AC Servomotors and Servo Drives (OMNUC W Series with Built-in MECHATROLINK-II Communications)

R88M-W/R88D-WN□-ML2

Use MECHATROLINK-II Communications with the Controller and Save Space.

- **Data Communications with MECHATROLINK-II:**
Data communications are used to transfer all control information between the Servo Drive and Controller. This enables using the performance of the Servo Motor to the limit because there are no restrictions imposed by the transmission performance of control signals.
- **A communications module is built into the Servo Drive, thus saving space in the control panel by occupying less than 2/3 of the space required for a MECHATROLINK-II Interface Unit mounted to a W-series Servo Drive.**
- **W-series Servomotors:**
W-series Servomotors can be used as is, including Encoder Cables and Power Cables, so the System can be upgraded with no need to change the equipment design. (See note.)

System Configuration



- High-speed, high-precision motion control: No-deviation control and predictive control are provided for high-tracking capability.

Note: 1. MECHATROLINK-II is a registered trademark of the MECHATROLINK Members Association.
2. When a Servomotor with an absolute encoder is used, a separate battery cable is required for the absolute encoder. For details, refer to D-14 Page.



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

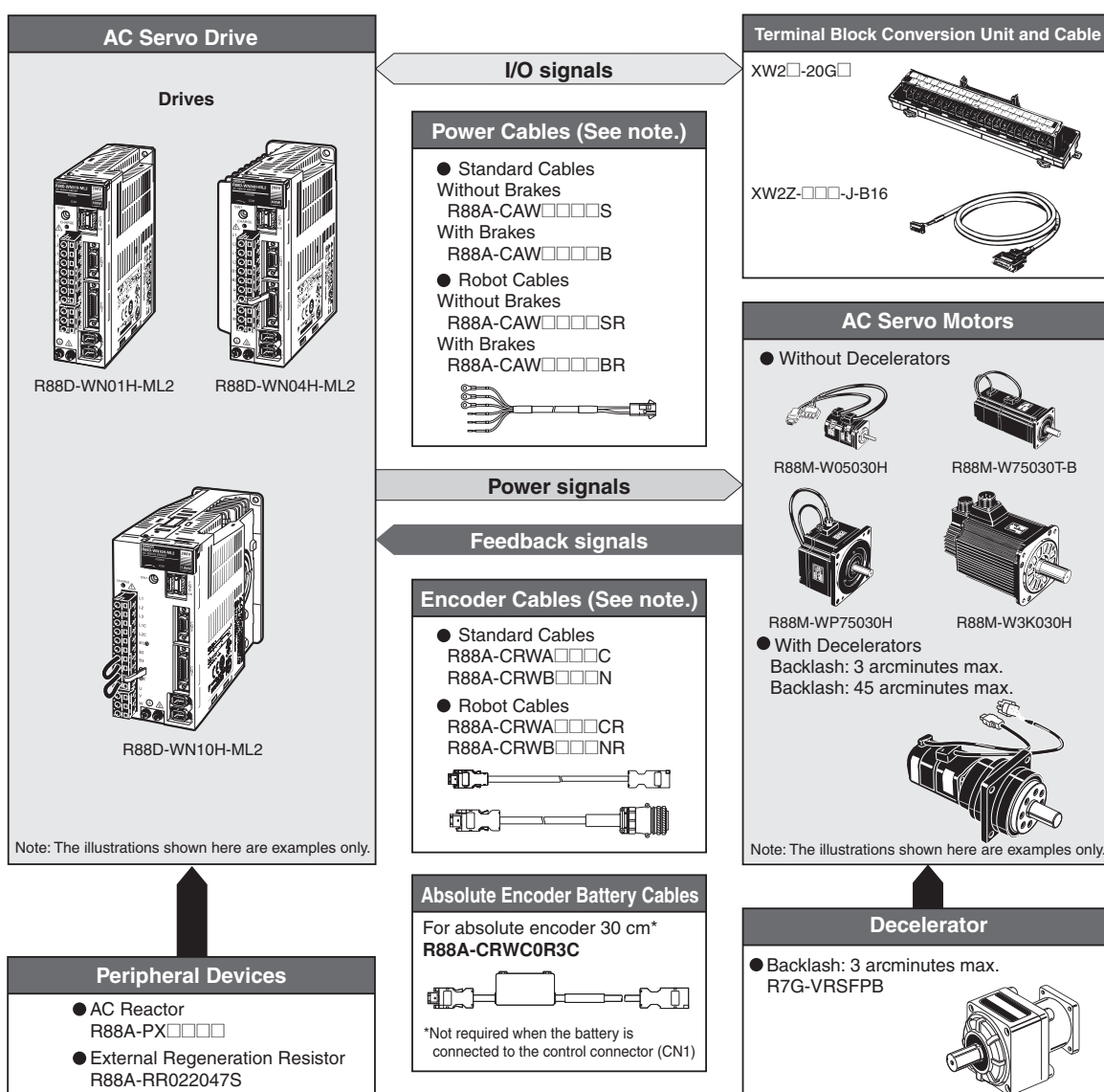
Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior



Interpreting Model Numbers

● AC Servomotors (without Decelerator)

R88M-W□□□□□□□□-□□□□
1 2 3 4 5 6 7 8 9

No.	Item	Symbol	Specifications
1	Indicates a Servomotor.		
3	Series	W	W Series
4	Type	Blank	Cylinder
		P	Flat
4	Motor capacity	050	50 W
		100	100 W
		1K0	1 kW
5	Speed	10	1000 r/min
		15	1500 r/min
		30	3000 r/min
6	Power supply voltage	H	200 VAC, with incremental encoder
		T	200 VAC, with absolute encoder
7	Brake	Blank	Without a brake
		B	With 24-VDC brake
8	Waterproofing and/or oil seal (See note.)	Blank	Neither
		O	With oil seal
		W	With waterproofing
9	Shaft form	Blank	Straight shaft
		S1	With key
		S2	With key and with tab
		S3	Straight shaft with tab

Note: Waterproofing is available for Flat-type Servomotors only.

● AC Servo Drives

R88D-WN□□□□ML2
1 2 3 4 5 6

No.	Item	Symbol	Specifications
1	Indicates a Servomotor.		
3	Series	W	W Series
3	Input signal specification	N	With built-in communications
4	Maximum output capacity	A5	50 W
		01	100 W
		10	1 kW
5	Power supply voltage	H	200 VAC
		L	100 VAC
6	Other	ML2	Built-in MECHATROLINK-II communications

● AC Servomotors (with Decelerator)

R88M-W□□□□□□□□-□G□□□□
1 2 3 4 5 6 7 8 9 10

No.	Item	Symbol	Specifications
1	Indicates a Servomotor.		
2	Series	W	W Series
3	Type	Blank	Cylinder
		P	Flat
4	Motor capacity	050	50W
		100	100W
		1K0	1kW
5	Speed	10	1000r/min
		15	1500r/min
		30	3000r/min
6	Power supply voltage	H	200 VAC, with incremental encoder
		T	200 VAC, with absolute encoder
7	Brake	Blank	Without a brake
		B	With 24-VDC brake
8	Gear ratio (See note.)	G05 to G45	G05: 1/5, G09: 1/9, G11: 1/11, G15: 1/15, G20: 1/20, G21: 1/21, G25: 1/25, G29: 1/29, G33: 1/33, G45:1/45
9	Backlash	B	3 arcminutes max.
		C	Approx. 45 min
10	Decelerator shaft	Blank	Straight shaft
		J	With key

Note: Not all Servomotors and Decelerators can be used in combination. Refer to *Combining Servomotors and Decelerators* on page 60.

● Servo Drive and Servomotor Combinations (without Decelerator)

R88M-W□□□□□□□□-□□□□
1 2 3 4 5 6 7 8 9

3	4	5	Basic model (R88M-)	6		7		8			9			
Type	Motor capac- ity	Speed		Motor power supply specifica- tions		Brake		Waterproofing and oil seal specifications			Shaft form			
				H	T	None	B	None	O	W	None	S1	S2	S3
Cylinder	50 W	3000 r/min	R88M-W05030	○	○	○	○	○	○		○	○	○	○
	100 W		R88M-W10030	○	○	○	○	○	○		○	○	○	○
	200 W		R88M-W20030	○	○	○	○	○	○		○	○	○	○
	400 W		R88M-W40030	○	○	○	○	○	○		○	○	○	○
	750 W		R88M-W75030	○	○	○	○	○	○		○	○	○	○
	1 kW		R88M-W1K030	○	○	○	○	○	○		○		○	
	1.5 kW		R88M-W1K530	○	○	○	○	○	○		○		○	
	2k W		R88M-W2K030	○	○	○	○	○	○		○		○	
	3 kW		R88M-W3K030	○	○	○	○	○	○		○		○	
	450 W	1500 r/min	R88M-W45015		○	○	○	○	○		○		○	
	850 W		R88M-W85015		○	○	○	○	○		○		○	
	1.3 kW		R88M-W1K315		○	○	○	○	○		○		○	
	1.8 kW		R88M-W1K815		○	○	○	○	○		○		○	
	300 W	1000 r/min	R88M-W30010	○	○	○	○	○	○		○		○	
	600 W		R88M-W60010	○	○	○	○	○	○		○		○	
	900 W		R88M-W90010	○	○	○	○	○	○		○		○	
	1.2 kW		R88M-W1K210	○	○	○	○	○	○		○		○	
	2 kW		R88M-W2K010	○	○	○	○	○	○		○		○	
Flat	100 W	3000 r/min	R88M-WP10030	○	○	○	○	○	○	○	○	○	○	○
	200 W		R88M-WP20030	○	○	○	○	○	○	○	○	○	○	○
	400 W		R88M-WP40030	○	○	○	○	○	○	○	○	○	○	○
	750 W		R88M-WP75030	○	○	○	○	○	○	○	○	○	○	○
	1.5 kW		R88M-WP1K530	○	○	○	○	○	○	○	○	○	○	○

Note: Only absolute encoders can be used with 1,500-r/min Servomotors. (They can be used as incremental encoders.)

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

Ordering Information

● AC Servomotors

Cylinder-type Servomotors (3000-r/min) (with Incremental Encoder)

Specifications			Model
Straight shaft without key	Without brake	50 W	R88M-W05030H
		100 W	R88M-W10030H
		200 W	R88M-W20030H
		400 W	R88M-W40030H
		750 W	R88M-W75030H
	With brake	50 W	R88M-W05030H-B
		100 W	R88M-W10030H-B
		200 W	R88M-W20030H-B
		400 W	R88M-W40030H-B
		75 W	R88M-W75030H-B
Straight shaft with key	Without brake	50 W	R88M-W05030H-S1
		100 W	R88M-W10030H-S1
		200 W	R88M-W20030H-S1
		400 W	R88M-W40030H-S1
		750 W	R88M-W75030H-S1
		1 kW	R88M-W1K030H-S2
		1.5 kW	R88M-W1K530H-S2
		2 kW	R88M-W2K030H-S2
		3 kW	R88M-W3K030H-S2
	With brake	50 W	R88M-W05030H-BS1
		100 W	R88M-W10030H-BS1
		200 W	R88M-W20030H-BS1
		400 W	R88M-W40030H-BS1
		750 W	R88M-W75030H-BS1
		1 kW	R88M-W1K030H-BS2
		1.5 kW	R88M-W1K530H-BS2
		2 kW	R88M-W2K030H-BS2
		3 kW	R88M-W3K030H-BS2

Cylinder-type Servomotors (3000-r/min) (with Absolute Encoder)

Specifications			Model
Straight shaft without key	Without brake	50 W	R88M-W05030T
		100 W	R88M-W10030T
		200 W	R88M-W20030T
		400 W	R88M-W40030T
		750 W	R88M-W75030T
	With brake	50 W	R88M-W05030T-B
		100 W	R88M-W10030T-B
		200 W	R88M-W20030T-B
		400 W	R88M-W40030T-B
		750 W	R88M-W75030T-B
Straight shaft with key	Without brake	50 W	R88M-W05030T-S1
		100 W	R88M-W10030T-S1
		200 W	R88M-W20030T-S1
		400 W	R88M-W40030T-S1
		750 W	R88M-W75030T-S1
		1 kW	R88M-W1K030T-S2
		1.5 kW	R88M-W1K530T-S2
		2 kW	R88M-W2K030T-S2
		3 kW	R88M-W3K030T-S2
	With brake	50 W	R88M-W05030T-BS1
		100 W	R88M-W10030T-BS1
		200 W	R88M-W20030T-BS1
		400 W	R88M-W40030T-BS1
		750 W	R88M-W75030T-BS1
		1 kW	R88M-W1K030T-BS2
		1.5 kW	R88M-W1K530T-BS2
		2 kW	R88M-W2K030T-BS2
		3 kW	R88M-W3K030T-BS2

Note: 1. The 100-VAC Servomotors cannot be connected. (Connect a 200-VAC Servomotor even for a 100-VAC Servo Drive.)

2. An S1 suffix indicates models with a key but no tap. An S2 suffix indicates models with both a key and tap. For Servomotors of 1 kW or more, there are no S1 or S3 models.

**Cylinder-type Servomotors (1500-r/min)
(for Incremental or Absolute Encoders)**

Specifications			Model
Straight shaft with key	Without brake	450 W	R88M-W45015T-S2
		850 W	R88M-W85015T-S2
		1.3 kW	R88M-W1K315T-S2
		1.8 kW	R88M-W1K815T-S2
	With brake	450 W	R88M-W45015T-BS2
		850 W	R88M-W85015T-BS2
		1.3 kW	R88M-W1K315T-BS2
		1.8 kW	R88M-W1K815T-BS2

**Cylinder-type Servomotors (1000-r/min)
(with Incremental Encoder)**

Specifications			Model
Straight shaft with key	Without brake	300 W	R88M-W30010H-S2
		600 W	R88M-W60010H-S2
		900 W	R88M-W90010H-S2
		1.2 kW	R88M-W1K210H-S2
		2 kW	R88M-W2K010H-S2
	With brake	300 W	R88M-W30010H-BS2
		600 W	R88M-W60010H-BS2
		900 W	R88M-W90010H-BS2
		1.2 kW	R88M-W1K210H-BS2
		2 kW	R88M-W2K010H-BS2

Note: An S2 suffix indicates models with both a key and tap. For 1,000 r/min-Servomotors, there are no S1 or S3 models.

**Cylinder-type Servomotors (1000-r/min)
(with Absolute Encoder)**

Specifications			Model
Straight shaft with key	Without brake	300 W	R88M-W30010T-S2
		600 W	R88M-W60010T-S2
		900 W	R88M-W90010T-S2
		1.2 W	R88M-W1K210T-S2
		2 kW	R88M-W2K010T-S2
	With brake	300 W	R88M-W30010T-BS2
		600 W	R88M-W60010T-BS2
		900 W	R88M-W90010T-BS2
		1.2 kW	R88M-W1K210T-BS2
		2 kW	R88M-W2K010T-BS2

Note: An S2 suffix indicates models with both a key and tap. For 1,000 r/min-Servomotors, there are no S1 or S3 models.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

Flat-type Servomotors (with Incremental Encoder)

Specifications			Model
Straight shaft without key	Without brake	100 W	R88M-WP10030H
		200 W	R88M-WP20030H
		400 W	R88M-WP40030H
		750 W	R88M-WP75030H
		1.5 kW	R88M-WP1K530H
	With brake	100 W	R88M-WP10030H-B
		200 W	R88M-WP20030H-B
		400 W	R88M-WP40030H-B
		750 W	R88M-WP75030H-B
		1.5 kW	R88M-WP1K530H-B
Straight shaft with key	Without brake	100 W	R88M-WP10030H-S1
		200 W	R88M-WP20030H-S1
		400 W	R88M-WP40030H-S1
		750 W	R88M-WP75030H-S1
		1.5 kW	R88M-WP1K530H-S1
	With brake	100 W	R88M-WP10030H-BS1
		200 W	R88M-WP20030H-BS1
		400 W	R88M-WP40030H-BS1
		750 W	R88M-WP75030H-BS1
		1.5 kW	R88M-WP1K530H-BS1

Waterproof Flat-type Servomotors (See note 3.) (with Incremental Encoder)

Specifications			Model
Straight shaft without key	Without brake	100 W	R88M-WP10030H-W
		200 W	R88M-WP20030H-W
		400 W	R88M-WP40030H-W
		750 W	R88M-WP75030H-W
		1.5 kW	R88M-WP1K530H-W
	With brake	100 W	R88M-WP10030H-BW
		200 W	R88M-WP20030H-BW
		400 W	R88M-WP40030H-BW
		750 W	R88M-WP75030H-BW
		1.5 kW	R88M-WP1K530H-BW
Straight shaft with key	Without brake	100 W	R88M-WP10030H-WS1
		200 W	R88M-WP20030H-WS1
		400 W	R88M-WP40030H-WS1
		750 W	R88M-WP75030H-WS1
		1.5 kW	R88M-WP1K530H-WS1
	With brake	100 W	R88M-WP10030H-BWS1
		200 W	R88M-WP20030H-BWS1
		400 W	R88M-WP40030H-BWS1
		750 W	R88M-WP75030H-BWS1
		1.5 kW	R88M-WP1K530H-BWS1

Flat-type Servomotor (with Absolute Encoder)

Specifications			Model
Straight shaft without key	Without brake	100 W	R88M-WP10030T
		200 W	R88M-WP20030T
		400 W	R88M-WP40030T
		750 W	R88M-WP75030T
		1.5 kW	R88M-WP1K530T
	With brake	100 W	R88M-WP10030T-B
		200 W	R88M-WP20030T-B
		400 W	R88M-WP40030T-B
		750 W	R88M-WP75030T-B
		1.5 kW	R88M-WP1K530T-B
Straight shaft with key	Without brake	100 W	R88M-WP10030T-S1
		200 W	R88M-WP20030T-S1
		400 W	R88M-WP40030T-S1
		750 W	R88M-WP75030T-S1
		1.5 kW	R88M-WP1K530T-S1
	With brake	100 W	R88M-WP10030T-BS1
		200 W	R88M-WP20030T-BS1
		400 W	R88M-WP40030T-BS1
		750 W	R88M-WP75030T-BS1
		1.5 kW	R88M-WP1K530T-BS1

Waterproof Flat-type Servomotors (See note 3.) (with Absolute Encoder)

Specifications			Model
Straight shaft without key	Without brake	100 W	R88M-WP10030T-W
		200 W	R88M-WP20030T-W
		400 W	R88M-WP40030T-W
		750 W	R88M-WP75030T-W
		1.5 kW	R88M-WP1K530T-W
	With brake	100 W	R88M-WP10030T-BW
		200 W	R88M-WP20030T-BW
		400 W	R88M-WP40030T-BW
		750 W	R88M-WP75030T-BW
		1.5 kW	R88M-WP1K530T-BW
Straight shaft with key	Without brake	100 W	R88M-WP10030T-WS1
		200 W	R88M-WP20030T-WS1
		400 W	R88M-WP40030T-WS1
		750 W	R88M-WP75030T-WS1
		1.5 kW	R88M-WP1K530T-WS1
	With brake	100 W	R88M-WP10030T-BWS1
		200 W	R88M-WP20030T-BWS1
		400 W	R88M-WP40030T-BWS1
		750 W	R88M-WP75030T-BWS1
		1.5 kW	R88M-WP1K530T-BWS1

- Note:** 1. The 100-VAC Servomotors cannot be connected. (Connect a 200-VAC Servomotor even for a 100-VAC Servo Drive.)
2. An S1 suffix indicates models with a key but with no tap. An S2 suffix indicates models with both a key and tap. For Servomotors of 1 kW or more, there are no S1 or S3 models.
3. Selecting a Servomotor
1. The Servomotor shaft and connectors are not waterproof. Do not expose them to water.
2. The Standard Cable (R88A-CAW□□□□□) can be used, but it is not waterproof. If waterproofing is required, the user must provide waterproof cable.
3. If the connectors or cable are to be exposed to water, it is recommended that the connectors (including at the Servomotor) be replaced with waterproof connectors to protect the terminals. For recommended waterproof connectors, refer to 3-1-2 *Servomotor Installation Conditions* in OMNUC W Series User's Manual (Cat. No. I531).

● AC Servo Drives

Specifications			Model
MECHATROLINK-II Communications (incremental and absolute encoders)	200 VAC	50 W	R88D-WNA5H-ML2
		100 W	R88D-WN01H-ML2
		200 W	R88D-WN02H-ML2
		400 W	R88D-WN04H-ML2
		500 W	R88D-WN05H-ML2
		750 W	R88D-WN08H-ML2
		1.0 kW	R88D-WN10H-ML2
		1.5 kW	R88D-WN15H-ML2
		2.0 kW	R88D-WN20H-ML2
		3.0 kW	R88D-WN30H-ML2
	100 VAC	50 W	R88D-WNA5L-ML2
		100 W	R88D-WN01L-ML2
		200 W	R88D-WN02L-ML2
		400 W	R88D-WN04L-ML2

● Decelerators (Straight Shaft with Key: Nidec-Shimpo Corporation)

For Cylinder-type Motors (Backlash: 3 Arcminutes Max.)

Motor capacity	Model	Gear ratio			
		1/5	1/9	1/15	1/25
50 W	R7G-VRSFPB05B50	OK			
	R7G-VRSFPB09B50		OK		
	R7G-VRSFPB15B50			OK	
	R7G-VRSFPB25B50				OK
100 W	R7G-VRSFPB05B100	OK			
	R7G-VRSFPB09B100		OK		
	R7G-VRSFPB15B100			OK	
	R7G-VRSFPB25C100				OK
200 W	R7G-VRSFPB05B200	OK			
	R7G-VRSFPB09C400		OK		
	R7G-VRSFPB15C400			OK	
	R7G-VRSFPB25C200				OK
400 W	R7G-VRSFPB05C400	OK			
	R7G-VRSFPB09C400		OK		
	R7G-VRSFPB15C400			OK	
	R7G-VRSFPB25D400				OK
750 W	R7G-VRSFPB05C750	OK			
	R7G-VRSFPB09D750		OK		
	R7G-VRSFPB15D750			OK	
	R7G-VRSFPB25E750				OK

For Flat-type Motors (Backlash: 3 Arcminutes Max.)

Motor capacity	Model	Gear ratio			
		1/5	1/9	1/15	1/25
100 W	R7G-VRSFPB05B100P	OK			
	R7G-VRSFPB09B100P		OK		
	R7G-VRSFPB15B100P			OK	
	R7G-VRSFPB25C100P				OK
200 W	R7G-VRSFPB05B200P	OK			
	R7G-VRSFPB09C400P		OK		
	R7G-VRSFPB15C400P			OK	
	R7G-VRSFPB25C200P				OK
400 W	R7G-VRSFPB05C400P	OK			
	R7G-VRSFPB09C400P		OK		
	R7G-VRSFPB15C400P			OK	
	R7G-VRSFPB25D400P				OK
750 W	R7G-VRSFPB05C750P	OK			
	R7G-VRSFPB09D750P		OK		
	R7G-VRSFPB15D750P			OK	
	R7G-VRSFPB25E750P				OK

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

● Power Cable

Specifications		Model
Power Cables for Servomotors without Brakes	For 3000-r/min Cylinder-type Motors: 50 W to 750 W For Flat-type Motors: 100 W to 750 W	3 m R88A-CAWA003S
		5 m R88A-CAWA005S
		10 m R88A-CAWA010S
		15 m R88A-CAWA015S
		20 m R88A-CAWA020S
		30 m R88A-CAWA030S
		40 m R88A-CAWA040S
		50 m R88A-CAWA050S
	For Flat-type Motors: 1.5 kW	3 m R88A-CAWB003S
		5 m R88A-CAWB005S
		10 m R88A-CAWB010S
		15 m R88A-CAWB015S
		20 m R88A-CAWB020S
		30 m R88A-CAWB030S
		40 m R88A-CAWB040S
		50 m R88A-CAWB050S
	For 1000-r/min Cylinder-type Motors: 300 W to 900 W For 1500-r/min Cylinder-type Motors: 450 W to 1.3 kW For 3000-r/min Cylinder-type Motors: 1 kW to 2 kW	3 m R88A-CAWC003S
		5 m R88A-CAWC005S
		10 m R88A-CAWC010S
		15 m R88A-CAWC015S
		20 m R88A-CAWC020S
		30 m R88A-CAWC030S
		40 m R88A-CAWC040S
		50 m R88A-CAWC050S
	For 1000-r/min Cylinder-type Motors: 1.2 kW to 2 kW For 1500-r/min Cylinder-type Motors: 1.8 W For 3000-r/min Cylinder-type Motors: 3 kW	3 m R88A-CAWD003S
		5 m R88A-CAWD005S
		10 m R88A-CAWD010S
		15 m R88A-CAWD015S
		20 m R88A-CAWD020S
		30 m R88A-CAWD030S
		40 m R88A-CAWD040S
		50 m R88A-CAWD050S
Power Cables for Servomotors with Brakes	For 3000-r/min Cylinder-type Motors: 50 W to 750 W For Flat-type Motors: 100 W to 750 W	3 m R88A-CAWA003B
		5 m R88A-CAWA005B
		10 m R88A-CAWA010B
		15 m R88A-CAWA015B
		20 m R88A-CAWA020B
		30 m R88A-CAWA030B
		40 m R88A-CAWA040B
		50 m R88A-CAWA050B
	For Flat-type Motors: 1.5 kW	3 m R88A-CAWB003B
		5 m R88A-CAWB005B
		10 m R88A-CAWB010B
		15 m R88A-CAWB015B
		20 m R88A-CAWB020B
		30 m R88A-CAWB030B
		40 m R88A-CAWB040B
		50 m R88A-CAWB050B
	For 1000-r/min Cylinder-type Motors: 300 W to 900 W For 1500-r/min Cylinder-type Motors: 450 W to 1.3 kW For 3000-r/min Cylinder-type Motors: 1 kW to 2 kW	3 m R88A-CAWC003B
		5 m R88A-CAWC005B
		10 m R88A-CAWC010B
		15 m R88A-CAWC015B
		20 m R88A-CAWC020B
		30 m R88A-CAWC030B
		40 m R88A-CAWC040B
		50 m R88A-CAWC050B
	For 1000-r/min Cylinder-type Motors: 1.2 kW to 2 kW For 1500-r/min Cylinder-type Motors: 1.8 kW For 3000-r/min Cylinder-type Motors: 3kW	3 m R88A-CAWD003B
		5 m R88A-CAWD005B
		10 m R88A-CAWD010B
		15 m R88A-CAWD015B
		20 m R88A-CAWD020B
		30 m R88A-CAWD030B
		40 m R88A-CAWD040B
		50 m R88A-CAWD050B

Note: If the cable must be bent, use a Robot Cable for the Power Cable. (Refer to the tables on the following pages.)

● Encoder Cables

Specifications		Model
For 3000-r/min Cylinder-type Motors: 50 W to 750 W For Flat-type Motors: 100 W to 1.5 kW	3 m	R88A-CRWA003C
	5 m	R88A-CRWA005C
	10 m	R88A-CRWA010C
	15 m	R88A-CRWA015C
	20 m	R88A-CRWA020C
	30 m	R88A-CRWA030C
	40 m	R88A-CRWA040C
	50 m	R88A-CRWA050C
For 3000-r/min Cylinder-type Motors: 1 kW to 3 kW For 1500-r/min Cylinder-type Motors: 450 W to 1.8 kW For 1000-r/min Cylinder-type Motors: 300 W to 2 kW	3 m	R88A-CRWB003N
	5 m	R88A-CRWB005N
	10 m	R88A-CRWB010N
	15 m	R88A-CRWB015N
	20 m	R88A-CRWB020N
	30 m	R88A-CRWB030N
	40 m	R88A-CRWB040N
	50 m	R88A-CRWB050N
Absolute Encoder Battery Cable		R88A-CRWC0R3C (See note 1.)
Backup Battery		R88A-BAT01W

- Note:** 1. One R88A-BAT01W Battery is included.
2. All of the cables can be used for both incremental and absolute encoders.
3. If the cable must be bent, use a Robot Cable for the Encoder Cable. (Refer to the tables on the following pages.)

● External Regeneration Resistor

Specifications	Model
Regeneration capacity: 220 W, 47 Ω	R88A-RR22047S

● AC Reactors

Specifications	Model
For R88D-WNA5L-ML2/01L-ML2/02H-ML2	R88A-PX5053
For R88D-WN02L-ML2/04H-ML2	R88A-PX5054
For R88D-WN04L-ML2/08H-ML2	R88A-PX5056
For R88D-WNA5H-ML2/01H-ML2	R88A-PX5052
For R88D-WN05H-ML2/10H-ML2	R88A-PX5061
For R88D-WN15H-ML2/20H-ML2	R88A-PX5060
For R88D-WN30H-ML2	R88A-PX5059

● Front-panel Brackets

Specifications	Model
For R88D-WNA5L-ML2 to 04L-ML2	R88A-TK05W
For R88D-WNA5H-ML2 to 10H-ML2	
For R88D-WN15H-ML2	R88A-TK06W
For R88D-WN20H-ML2/30H-ML2	R88A-TK07W

Note: Required when mounting a Servo Drive from the front panel.

● Peripheral Cables and Connectors

Specifications	Model
Analog Monitor Cable (1 m)	R88A-CMW001S
Computer Monitor Cable (IBM PC/AT or compatible, 2 m)	R88A-CCW002P2
Control I/O Connector (CN1)	R88A-CNW01C
Encoder Connector for Driver End	R88A-CNW01R
Encoder Connector for Motor End	R88A-CNW02R
Connector Terminal Block Cables (1 m)	XW2Z-100J-B16
Connector Terminal Block Cables (2 m)	XW2Z-200J-B16

● MECHATROLINK-related Devices and Cables (Manufactured by Yaskawa Corporation)

Name		OMRON model number	Yaskawa model number
MECHATROLINK-II Cables (with ring core and USB connector on both ends)	0.5 m	FNY-W6003-A5	JEPMC-W6003-A5
	1.0 m	FNY-W6003-01	JEPMC-W6003-01
	3.0 m	FNY-W6003-03	JEPMC-W6003-03
	5.0 m	FNY-W6003-05	JEPMC-W6003-05
	10.0 m	FNY-W6003-10	JEPMC-W6003-10
	20.0 m	FNY-W6003-20	JEPMC-W6003-20
	30.0 m	FNY-W6003-30	JEPMC-W6003-30
MECHATROLINK-II Terminating Resistor	Terminating resistance	FNY-W6022	JEPMC-W6022
MECHATROLINK-II Repeater	Communications Repeater	FNY-REP2000	JEPMC-REP2000

Note: MECHATROLINK-related Devices and Cables are manufactured by Yaskawa Corporation, but they can be ordered directly from OMRON using the OMRON model numbers. (Yaskawa-brand products will be delivered even when they are ordered from OMRON.)

● Robot Cables

Power Cables

Specifications			Model
For Motors without brakes	For 3000-r/min Cylinder-type Motors: 30 W to 750 W For Flat-type Motors: 100 W to 750 W	3 m	R88A-CAWA003SR
		5 m	R88A-CAWA005SR
		10 m	R88A-CAWA010SR
		15 m	R88A-CAWA015SR
		20 m	R88A-CAWA020SR
		30 m	R88A-CAWA030SR
		40 m	R88A-CAWA040SR
		50 m	R88A-CAWA050SR
	For Flat-type Motors: 1.5 kW	3 m	R88A-CAWB003SR
		5 m	R88A-CAWB005SR
		10 m	R88A-CAWB010SR
		15 m	R88A-CAWB015SR
		20 m	R88A-CAWB020SR
		30 m	R88A-CAWB030SR
		40 m	R88A-CAWB040SR
		50 m	R88A-CAWB050SR
	For 1000-r/min Cylinder-type Motors: 300 W to 900 W For 1500-r/min Cylinder-type Motors: 450 W to 1.3 kW For 3000-r/min Cylinder-type Motors: 1 kW to 2 kW	3 m	R88A-CAWC003SR
		5 m	R88A-CAWC005SR
		10 m	R88A-CAWC010SR
		15 m	R88A-CAWC015SR
		20 m	R88A-CAWC020SR
		30 m	R88A-CAWC030SR
		40 m	R88A-CAWC040SR
		50 m	R88A-CAWC050SR
	For 1000-r/min Cylinder-type Motors: 1.2 kW to 2 kW For 1500-r/min Cylinder-type Motors: 1.8 kW For 3000-r/min Cylinder-type Motors: 3 kW	3 m	R88A-CAWD003SR
		5 m	R88A-CAWD005SR
		10 m	R88A-CAWD010SR
		15 m	R88A-CAWD015SR
		20 m	R88A-CAWD020SR
		30 m	R88A-CAWD030SR
		40 m	R88A-CAWD040SR
		50 m	R88A-CAWD050SR
For Motors with brakes	For 3000-r/min Cylinder-type Motors: 30 W to 750 W For Flat-type Motors: 100 W to 750 W	3 m	R88A-CAWA003BR
		5 m	R88A-CAWA005BR
		10 m	R88A-CAWA010BR
		15 m	R88A-CAWA015BR
		20 m	R88A-CAWA020BR
		30 m	R88A-CAWA030BR
		40 m	R88A-CAWA040BR
		50 m	R88A-CAWA050BR
	For Flat-type Motors: 1.5 kW	3 m	R88A-CAWB003BR
		5 m	R88A-CAWB005BR
		10 m	R88A-CAWB010BR
		15 m	R88A-CAWB015BR
		20 m	R88A-CAWB020BR
		30 m	R88A-CAWB030BR
		40 m	R88A-CAWB040BR
		50 m	R88A-CAWB050BR

Specifications			Model
For Motors with brakes	For 1000-r/min Cylinder-type Motors: 300 W to 900 W For 1500-r/min Cylinder-type Motors: 450 W to 1.3 kW For 3000-r/min Cylinder-type Motors: 1 kW to 2 kW	3 m	R88A-CAWC003BR
		5 m	R88A-CAWC005BR
		10 m	R88A-CAWC010BR
		15 m	R88A-CAWC015BR
		20 m	R88A-CAWC020BR
		30 m	R88A-CAWC030BR
		40 m	R88A-CAWC040BR
		50 m	R88A-CAWC050BR
	For 1000-r/min Cylinder-type Motors: 1.2 kW to 2 kW For 1500-r/min Cylinder-type Motors: 1.8 kW For 3000-r/min Cylinder-type Motors: 3 kW	3 m	R88A-CAWD003BR
		5 m	R88A-CAWD005BR
		10 m	R88A-CAWD010BR
		15 m	R88A-CAWD015BR
		20 m	R88A-CAWD020BR
		30 m	R88A-CAWD030BR
		40 m	R88A-CAWD040BR
		50 m	R88A-CAWD050BR

Encoder Cables

Specifications		Model
For 3000-r/min Cylinder-type Motors: 30 W to 750 W For Flat-type Motors: 100 W to 1.5 kW	3 m	R88A-CRWA003CR
	5 m	R88A-CRWA005CR
	10 m	R88A-CRWA010CR
	15 m	R88A-CRWA015CR
	20 m	R88A-CRWA020CR
	30 m	R88A-CRWA030CR
	40 m	R88A-CRWA040CR
	50 m	R88A-CRWA050CR
For 3000-r/min Cylinder-type Motors: 1 kW to 3 kW For 1500-r/min Cylinder-type Motors: 450 W to 1.8 kW For 1000-r/min Cylinder-type Motors: 300 W to 2 kW	3 m	R88A-CRWB003NR
	5 m	R88A-CRWB005NR
	10 m	R88A-CRWB010NR
	15 m	R88A-CRWB015NR
	20 m	R88A-CRWB020NR
	30 m	R88A-CRWB030NR
	40 m	R88A-CRWB040NR
	50 m	R88A-CRWB050NR

Servomotors and Decelerators Combinations

Interpreting the Servomotor Combination Tables

First check the *Servomotor and Decelerator Combinations* table to see whether or not the planned combination is possible. Then check the tables for Servomotor categories **1** to **5** to see whether or not specific configurations are possible.

- The model configurations are shown based on the Servomotor capacity and the optional Decelerator ratio specifications.

R88M-W -

1 2

- The following symbols are used in the tables.

□ Blank: Without brake
B: With brake

△ Blank: Straight shaft
J: With key

※ H: 200 VAC, with incremental encoder
T: 200 VAC, with absolute encoder

● Servomotor and Decelerator Combinations

Motor	Capacity range	Servomotors with Decelerators		Decelerator (See note 1.)
		Standard, Backlash: 3 min max.	Economy, Backlash: Approx. 45 min	Standard, Backlash: 3 min max.
3000-r/min Cylinder-type Servomotors	50 W to 750 W	○	○	○
	1 kW to 3 kW	○		
1500-r/min Cylinder-type Servomotors	450 W to 1.8 kW	○		
1000-r/min Cylinder-type Servomotors	300 W to 2 kW	○		
Flat-type Servomotors	100 W to 750 W	○	○	○
	1.5 kW	○		

Note: 1. The task of combining the Decelerator and Servomotor is performed by the user.

2. A circle indicates that the combination is possible. A blank indicates that it is not possible.

1 3000-r/min Cylinder-type Servomotors (50 W to 750 W)

Motor capacity	Model	Decelerator (Gear ratio)				
		1/5	1/9	1/11	1/21	1/33
		□G05 B△	□G09 B△	□G11 B△	□G21 B△	□G33 B△
50 W	R88M-W05030※-	○	○		○	○
100 W	R88M-W10030※-	○		○	○	○
200 W	R88M-W20030※-	○		○	○	○
400 W	R88M-W40030※-	○		○	○	○
750 W	R88M-W75030※-	○		○	○	○

Note: A circle indicates that the combination is possible. A blank indicates that it is not possible.

2 3000-r/min Cylinder-type Servomotors (1 kW to 3 kW)

Motor capacity	Model	Decelerator (Gear ratio)				
		1/5	1/9	1/20	1/29	1/45
		□G05 BJ	□G09 BJ	□G20 BJ	□G29 BJ	□G45 BJ
1kW	R88M-W1K030※-	○	○	○	○	○
1.5 kW	R88M-W1K530※-	○	○	○	○	○
2 kW	R88M-W2K030※-	○	○	○	○	○
3 kW	R88M-W3K030※-	○	○	○	○	○

Note: 1. A circle indicates that the combination is possible. A blank indicates that it is not possible.

2. The Decelerator shaft has a key.

● Economy Decelerators

(Backlash: Approx. 45 min)

Motor capacity	Model	Decelerator (Gear ratio)			
		1/5	1/9	1/15	1/25
		□G05CJ	□G09CJ	□G15CJ	□G25CJ
50 W	R88M-W05030※-				
100 W	R88M-W10030※-	○	○	○	○
200 W	R88M-W20030※-	○	○	○	○
400 W	R88M-W40030※-	○	○	○	○
750 W	R88M-W75030※-	○	○	○	○

Note: 1. A circle indicates that the combination is possible. A blank indicates that it is not possible.

2. The Decelerator shaft has a key.

3 3000-r/min Flat-type Servomotors (100 W to 1.5 kW)

● Standard Decelerators (Backlash: 3 Arcminutes Max.)

Motor capacity	Model	Decelerator (Gear ratio)			
		1/5	1/11	1/21	1/33
		-□G05BΔ	-□G11BΔ	-□G21BΔ	-□G33BΔ
100 W	R88M-WP10030*-□	○	○	○	○
200 W	R88M-WP20030*-□	○	○	○	○
400 W	R88M-WP40030*-□	○	○	○	○
750 W	R88M-WP75030*-□	○	○	○	○
1.5 kW	R88M-WP1K530*-□	○	○	○	○

Note: A circle indicates that the combination is possible.

● Economy Decelerators (Backlash: Approx. 45 min)

Motor capacity	Model	Decelerator (Gear ratio)			
		1/5	1/9	1/15	1/25
		-□G05CJ	-□G09CJ	-□G15CJ	-□G25CJ
100 W	R88M-WP10030*-□	○	○	○	○
200 W	R88M-WP20030*-□	○	○	○	○
400 W	R88M-WP40030*-□	○	○	○	○
750 W	R88M-WP75030*-□	○	○	○	○
1.5 kW	R88M-WP1K530*-□				

Note: 1. A circle indicates that the combination is possible. A blank indicates that it is not possible.
2. The Decelerator shaft has a key.

4 1500-r/min Cylinder-type Servomotors (450 W to 1.8 kW)

Motor capacity	Model	Decelerator (Gear ratio)				
		1/5	1/9	1/20	1/29	1/45
		-□G05 BJ	-□G09 BJ	-□G20 BJ	-□G29 BJ	-□G45 BJ
450 W	R88M-W45015*-□	○	○	○	○	○
850 W	R88M-W85015*-□	○	○	○	○	○
1.3 kW	R88M-W1K315*-□	○	○	○	○	○
1.8 kW	R88M-W1K815*-□	○	○	○	○	○

Note: 1. A circle indicates that the combination is possible. A blank indicates that it is not possible.
2. The Decelerator shaft has a key.
3. Only absolute encoders can be used with these Servomotors. (They can be used as incremental encoders.)

5 1000-r/min Cylinder-type Servomotors (300 W to 2 kW)

Motor capacity	Model	Decelerator (Gear ratio)				
		1/5	1/9	1/20	1/29	1/45
		-□G05 BJ	-□G09 BJ	-□G20 BJ	-□G29 BJ	-□G45 BJ
300 W	R88M-W30010*-□	○	○	○	○	○
600 W	R88M-W60010*-□	○	○	○	○	○
900 W	R88M-W90010*-□	○	○	○	○	○
1.2 kW	R88M-W1K210*-□	○	○	○	○	○
2 kW	R88M-W2K010*-□	○	○	○		

Note: 1. A circle indicates that the combination is possible. A blank indicates that it is not possible.
2. The Decelerator shaft has a key.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

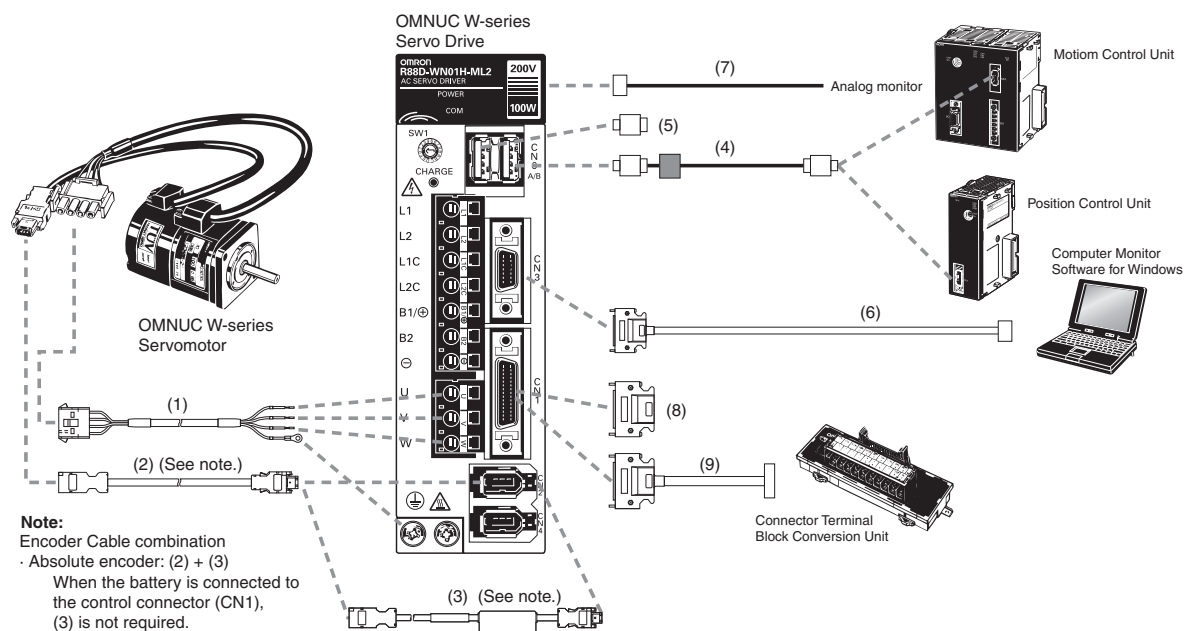
Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

Cable Combinations

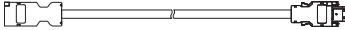




Power Cables

Symbol	Name	Servomotor type	Model number	Description
(1)	Without brake	For 3,000-r/min Cylinder-type Servomotors: 50 W to 750 W For 3,000-r/min Flat-type Servomotors: 100 W to 750 W	R88A-CAWA□□□S The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Servomotor connector (Tyco Electronics AMP KK) Connector cap: 350780-1 Connector socket: 350689-3
		For 3,000-r/min Flat-type Servomotors: 1.5 kW	R88A-CAWB□□□S The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Servomotor connector (Tyco Electronics AMP KK) Connector cap: 350780-1 Connector socket: 350551-6 (Connector pins 1 to 3) 350551-3 (Connector pin 4)
		For 3,000-r/min Cylinder-type Servomotors: 1 kW to 2 kW For 1,500-r/min Cylinder-type Servomotors: 450 W to 1.3 kW For 1,000-r/min Cylinder-type Servomotors: 300 W to 900 W	R88A-CAWC□□□S The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector cap: MS3106B18-10S (Daiichi Denshi Kogyo Co., Ltd) Cable clamp: MS3057-10A (Daiichi Denshi Kogyo Co., Ltd)
		For 3,000-r/min Cylinder-type Servomotors: 3 kW For 1,500-r/min Cylinder-type Servomotors: 1.8 kW For 1,000-r/min Cylinder-type Servomotors: 1.2 kW to 2 kW	R88A-CAWD□□□S The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector cap: MS3106B22-22S (Daiichi Denshi Kogyo Co., Ltd) Cable clamp: MS3057-12A (Daiichi Denshi Kogyo Co., Ltd)
	With brake	For 3,000-r/min Cylinder-type Servomotors: 50 W to 750 W For 3,000-r/min Flat-type Servomotors: 100 W to 750 W	R88A-CAWA□□□B The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Servomotor connector (Tyco Electronics AMP KK) Connector cap: 350781-1 Connector socket: 350689-3
		For 3,000-r/min Flat-type Servomotors: 1.5 kW	R88A-CAWB□□□B The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Servomotor connector (Tyco Electronics AMP KK) Connector cap: 350781-1 Connector socket: 350551-6 (Connector pins 1 to 3) 350551-3 (Connector pin 4)
		For 3,000-r/min Cylinder-type Servomotors: 1 kW to 2 kW For 1,500-r/min Cylinder-type Servomotors: 450 W to 1.3 kW For 1,000-r/min Cylinder-type Servomotors: 300 W to 900 W	R88A-CAWC□□□B The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector cap: MS3106B20-15S (Daiichi Denshi Kogyo Co., Ltd) Cable clamp: MS3057-12A (Daiichi Denshi Kogyo Co., Ltd)
		For 3,000-r/min Cylinder-type Servomotors: 3 kW For 1,500-r/min Cylinder-type Servomotors: 1.8 kW For 1,000-r/min Cylinder-type Servomotors: 1.2 kW to 2 kW	R88A-CAWD□□□B The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Connector cap: MS3106B24-10S (Daiichi Denshi Kogyo Co., Ltd) Cable clamp: MS3057-16A (Daiichi Denshi Kogyo Co., Ltd)

Note: Please refer to page 9 for details.

● Encoder Cables (CN2)

Symbol	Name	Servomotor type	Model number	Description
(2)	Encoder Cable	For 3,000-r/min Cylinder-style Servomotors: 50 W to 750 W For 3,000-r/min Flat-style Servomotors: 100 W to 1.5 kW	R88A-CRWA□□□C The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Servomotor connector (Molex Japan Co., Ltd.) Connector socket: 54280-0600 Servo Drive connector (Molex Japan Co., Ltd.) Connector plug: 55101-0600 Crimp terminal: 50639-8091 
		For 3,000-r/min Cylinder-style Servomotors: 1 kW to 3 kW For 1,500-r/min Cylinder-style Servomotors: 450 W to 1.8 kW For 1,000-r/min Cylinder-style Servomotors: 300 W to 2 kW	R88A-CRWB□□□N The □□□ digits in the model number indicate the cable length. 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 40 m, 50 m	Servomotor connector (Daiichi Denshi Kangyo Co., Ltd.) Connector socket: MS3106B20-29S Cable clamp: MS3057-12A Servo Drive connector (Molex Japan Co., Ltd.) Connector plug: 55101-0006 Crimp terminal: 50639-8091 
(3)	Absolute Encoder Battery Cable	Servomotors with absolute encoders	R88A-CRWC0R3C	Servomotor connector (Molex Japan Co., Ltd.) Connector socket: 54280-0600 Servo Drive connector (Molex Japan Co., Ltd.) Connector plug: 55101-0600 Crimp terminal: 50639-8091 
	Backup Battery	---	R88A-BAT01W	One Battery (R88A-BAT01W) is included.

Note: Please refer to page 9 for details.

● MECHATROLINK-II Cables (CN6)

Symbol	Name	Remarks	OMRON model number (See note.)	Yaskawa model number
(4)	MECHATROLINK-II Cables (Yaskawa Electric Corporation)	0.5 m	FN-Y-W6003-A5	JEPMC-W6003-A5
		1.0 m	FN-Y-W6003-01	JEPMC-W6003-01
		3.0 m	FN-Y-W6003-03	JEPMC-W6003-03
		5.0 m	FN-Y-W6003-05	JEPMC-W6003-05
		10 m	FN-Y-W6003-10	JEPMC-W6003-10
		20 m	FN-Y-W6003-20	JEPMC-W6003-20
		30 m	FN-Y-W6003-30	JEPMC-W6003-30
(5)	MECHATROLINK-II Terminating Resistor (Yaskawa Electric Corporation)	---	FN-Y-W6022	JEPMC-W6022

Note: When ordering Yaskawa products through OMRON, please use the OMRON model numbers.
Only the Yaskawa model number is shown on the product, and not the OMRON model number.

● Options for CN3

Symbol	Name	Connected item	Model
(6)	2-m Cable for connecting Monitor Software	For IBM PC/AT or compatible	R88A-CCW002P2

● Other Options

Symbol	Name	Description	Model
---	Backup battery	1000 mAh 3.6 V	R88A-BAT01W
(7)	Analog Monitor Cable	1 m	R88A-CMW001S
(8)	Control I/O Connector (CN1)	Servo Drive side	R88A-CNW01C
---	Encoder Connector (CN2)	Servo Drive side	R88A-CNW01R
		Servomotor side	R88A-CNW02R
(9)	Connector Terminal Block Cable	1 m	XW2Z-100J-B16
		2 m	XW2Z-200J-B16
	Connector Terminal Block Conversion Unit	M3-screw Terminal Block	XW2B-20G4
		M3.5-screw Terminal Block	XW2B-20G5
		M3-screw Terminal Block	XW2D-20G6

AC Servo Drive Specifications (R88D-WN□-ML2)

● Performance Specifications

Type			200-V AC Input Type (Single-phase Input)				
Item		Model (R88D-)	WNA5H-ML2	WN01H-ML2	WN02H-ML2	WN04H-ML2	WN08H-ML2
Continuous output current (rms)			0.66 A	0.91 A	2.1 A	2.8 A	5.5 A
Momentary maximum output current (rms)			2.1 A	2.8 A	6.5 A	8.5 A	16.9 A
Input power supply		Main circuits	Single-phase 100/115 V AC (85 to 127 V) 50/60 Hz				
		Control circuits	Single-phase 200/230 V AC (170 to 253 V) 50/60 Hz				
Heating value		Main circuits	4.6 W	6.7 W	13.3 W	20 W	47 W
		Control circuits	13 W	13 W	13 W	13 W	15 W
Control method			All-digital Servo				
Inverter method			PWM method based on IGBT				
PWM frequency			10.667 kHz				
Weight			Approx. 0.7 kg	Approx. 0.7 kg	Approx. 0.7kg	Approx. 0.9 kg	Approx. 1.4 kg
Maximum applicable Servomotor wattage			50 W	100 W	200 W	400 W	750 W
Applicable Servomotor (R88M-)	3,000-r/min	INC	W05030H	W10030H	W20030H	W40030H	W75030H
		ABS	W05030T	W10030T	W20030T	W40030T	W75030T
	3,000-r/min Flat-style	INC	---	WP10030H	WP20030H	WP40030H	WP75030H
		ABS	---	WP10030T	WP20030T	WP40030T	WP75030T
	1,000-r/min	INC	---	---	---	---	---
		ABS	---	---	---	---	---
	1,500-r/min	ABS	---	---	---	---	---
Performance	Speed control range		1:5000				
	Load fluctuation rate		0.01% max. at 0% to 100% (at rated rotation speed)				
	Voltage fluctuation rate		0% at rated voltage ±10% (at rated rotation speed)				
	Temperature fluctuation rate		±0.1% max. at 0 to 50°C (at rated rotation speed)				
	Frequency characteristics		600 Hz (See note.)				
	Torque control repeatability		±1%				

Note: At a load inertia equivalent to the Servomotor's rotor inertia.

● General Specifications

Item			Specifications
Ambient operating temperature			0 to 55°C
Ambient operating humidity			90% (with no condensation)
Ambient storage temperature			-20 to 85°C
Ambient storage humidity			90% (with no condensation)
Storage and operating atmosphere			No corrosive gases
Vibration resistance			10 to 55 Hz in X, Y, and Z directions with 0.1-mm double amplitude; acceleration: 4.9 m/s ² max.
Shock resistance			Acceleration 19.6 m/s ² max., in X, Y, and Z directions, three times
Insulation resistance			Between power supply/power line terminals and frame ground: 0.5 M Ω min. (at 500 V DC)
Dielectric strength			Between power supply/power line terminals and frame ground: 1,500 V AC for 1 min at 50/60 Hz Between each control signal and frame ground: 500 V AC for 1 min
Degree of protection			Built into panel (IP10).
International standards	EC directives	EMC directive	EN55011 class A group 1
			EN61000-6-2
		Low-voltage directive	EN50178
	UL standards		UL508C
	cUL standards		cUL C22.2 No.14

200-V AC Input Type (Three-phase Input)					100 V AC			
WN05H-ML2	WN10H-ML2	WN15H-ML2	WN20H-ML2	WN30H-ML2	WNA5L-ML2	WN01L-ML2	WN02L-ML2	WN04L-ML2
3.8 A	7.6 A	11.6 A	18.5 A	18.9 A	0.66 A	0.91 A	2.1 A	2.8 A
11.0 A	17.0 A	28.0 A	42.0A	56.0 A	2.1 A	2.8 A	6.5 A	8.5 A
Three-phase 200/230 V AC (170 to 253 V) 50/60 Hz					Single-phase 100/115 V AC (85 to 127 V) 50/60 Hz			
Single-phase 200/230 V AC (170 to 253 V) 50/60 Hz					Single-phase 100/115 V AC (85 to 127 V) 50/60 Hz			
27 W	55 W	92 W	120 W	155 W	5.2 W	12 W	16.4 W	24 W
15 W	15 W	15 W	15 W	15 W	13 W	13 W	13 W	13 W
All-digital Servo					All-digital Servo			
PWM method based on IGBT					PWM method based on IGBT			
10.667 kHz	8.000 kHz	4.000 kHz			10.667 kHz			
Approx. 1.4 kg	Approx. 1.4 kg	Approx. 2.1 kg	Approx. 2.8 kg	Approx. 2.8 kg	Approx. 0.7 kg	Approx. 0.7 kg	Approx. 0.7 kg	Approx. 1.4 kg
500 W	1 kW	1.5 kW	2 kW	3 kW	50 W	100 W	200 W	400 W
---	W1K030H	W1K530H	W2K030H	W3K030H	W05030H	W10030H	W20030H	W40030H
---	W1K030T	W1K530T	W2K030T	W3K030T	W05030T	W10030T	W20030T	W40030T
---	---	WP1K530H	---	---	---	WP10030H	WP20030H	WP40030H
---	---	WP1K530T	---	---	---	WP10030T	WP20030T	WP40030T
W30010H	W60010H W90010H	W1K210H	W2K010H	---	---	---	---	---
W30010T	W60010T W90010T	W1K210T	W2K010T	---	---	---	---	---
W45015T	W85015T	W1K315T	W1K815T	---	---	---	---	---
1:5000					1:5000			
0.01% max. at 0% to 100% (at rated rotation speed)					0.01% max. at 0% to 100% (at rated rotation speed)			
0% at rated voltage ±10% (at rated rotation speed)					0% at rated voltage ±10% (at rated rotation speed)			
±0.1% max. at 0 to 50°C (at rated rotation speed)					±0.1% max. at 0 to 50°C (at rated rotation speed)			
600 Hz (See note.)		400 Hz (See note.)			600 Hz (See note.)			
±1%					±1%			

Note: At a load inertia equivalent to the Servomotor's rotor inertia.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

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Junior

AC Servomotor Specifications (R88M-W)

● Performance Specifications

3,000-r/min Cylinder-type Servomotors

Power supply Specification		200 V AC (See note.)								
Model (R88M-)		W05030H	W10030H	W20030H	W40030H	W75030H	W1K030H	W1K530H	W2K030H	W3K030H
Item	Unit	W05030T	W10030T	W20030T	W40030T	W75030T	W1K030T	W1K530T	W2K030T	W3K030T
Applicable Servo Drive (R88D-)	100 V AC	WNA5L-ML2	WN01L-ML2	WN02L-ML2	WN04L-ML2	---	---	---	---	---
	200 V AC	WNA5H-ML2	WN01H-ML2	WN02H-ML2	WN04H-ML2	WN08H-ML2	WN10H-ML2	WN15H-ML2	WN20H-ML2	WN30H-ML2
Rated output	W	50	100	200	400	750	1000	1500	2000	3000
Rated torque	N·m	0.159	0.318	0.637	1.27	2.39	3.18	4.9	6.36	9.8
Rated rotation speed	r/min	3000								
Momentary maximum rotation speed	r/min	5000								
Momentary maximum torque	N·m	0.477	0.955	1.91	3.82	7.16	9.54	14.7	19.1	29.4
Rated current	A (irms)	0.64	0.91	2.1	2.8	4.4	5.7	9.7	12.7	18.8
Momentary maximum current	A (irms)	2.0	2.8	6.5	8.5	13.4	17	28	42	56
Rotor inertia	kg·m ² (GD ² /4)	2.20 × 10 ⁻⁶	3.64 × 10 ⁻⁶	1.06 × 10 ⁻⁵	1.73 × 10 ⁻⁵	6.72 × 10 ⁻⁵	1.74 × 10 ⁻⁴	2.47 × 10 ⁻⁴	3.19 × 10 ⁻⁴	7.00 × 10 ⁻⁴
Torque constant	N·m/A	0.268	0.378	0.327	0.498	0.590	0.64	0.56	0.54	0.57
Power rate	kW/s	11.5	27.8	38.2	93.7	84.8	57.9	97.2	127	137
Mechanical time constant	ms	0.88	0.53	0.39	0.25	0.26	0.87	0.74	0.62	0.74
Electrical time constant	ms	1.1	1.2	4.6	5.4	8.7	7.1	7.7	8.3	13.0
Allowable radial load	N	68	78	245	245	392	686	686	686	980
Allowable thrust load	N	54	54	74	74	147	196	196	196	392
Weight	Without brake	kg	Approx. 0.4	Approx. 0.5	Approx. 1.1	Approx. 1.7	Approx. 3.4	Approx. 4.6	Approx. 5.8	Approx. 7.0
	With brake	kg	Approx. 0.7	Approx. 0.8	Approx. 1.6	Approx. 2.2	Approx. 4.3	Approx. 6.0	Approx. 7.5	Approx. 8.5
Radiation shield dimensions (material)		t6 × □250 (Al)					t12 × □300 (Al)			t20 × □400 (Al)
Applicable load inertia		30×			20×		5×			
Brake specifications	Brake inertia	kg·m ² (GD ² /4)	8.5 × 10 ⁻⁷	8.5 × 10 ⁻⁷	5.8 × 10 ⁻⁶	5.8 × 10 ⁻⁶	1.4 × 10 ⁻⁵	2.5 × 10 ⁻⁵	2.5 × 10 ⁻⁵	2.5 × 10 ⁻⁵
	Excitation voltage	V	24 VDC±10%							
	Power consumption (at 20°C)	W	6	6	6.5	6.5	7.7	12	12	12
	Current consumption (at 20°C)	A	0.25	0.25	0.27	0.27	0.32	0.5	0.5	0.5
	Static friction torque	N·m	0.2 min.	0.34 min.	1.5 min.	1.5 min.	2.45 min.	7.8 min.	7.8 min.	7.8 min.
	Attraction time	ms	30 max.	30 max.	100 max.	100 max.	80 max.	180 max.	180 max.	180 max.
	Release time	ms	60 max.	60 max.	40 max.	40 max.	20 max.	100 max.	100 max.	100 max.
	Backlash		1° (reference value)							
	Rating	---	Continuous							
	Insulation grade	---	Type F							

Note: When using a W-series Servomotor with built-in MECHATROLINK-II communications, use a 200-VAC Servomotor regardless of whether the Servo Drive is 200 VAC or 100 VAC.

● General Specifications
3,000-r/min Cylinder-type Servomotors

Item			3,000-r/min Servomotors	
			50 to 750 W	1 to 3 kW
Ambient operating temperature			0 to 40°C	
Ambient operating humidity			20% to 80% (with no condensation)	
Ambient storage temperature			-20 to 60°C	
Ambient storage humidity			20% to 80% (with no condensation)	
Storage and operating atmosphere			No corrosive gasses.	
Vibration resistance			10 to 2,500 Hz in X, Y, and Z directions with acceleration 49 m/s ² max.	10 to 2,500 Hz in X, Y, and Z directions with acceleration 24.5 m/s ² max.
Shock resistance			Acceleration 490 m/s ² max., in X, Y, and Z directions, two times	
Insulation resistance			Between power line terminals and FG: 10 MΩ min. (at 500 V DC)	
Dielectric strength			Between power line terminals and FG: 1,500 V AC for 1 min at 50/60 Hz	
Run position			All directions	
Insulation grade			Type B	Type F
Structure			Totally-enclosed self-cooling	
Degree of protection			IP-55 (Excluding through-shaft portion)	IP-67 (Excluding through-shaft portion)
Vibration grade			V-15	
Mounting method			Flange-mounting	
International standards	EC Directives	EMC Directive	EN55011 class A group 1	
			EN61000-6-2	
		Low-voltage Directive	IEC60034-8 IEC60034-8, EN60034-1, -5, -9	
	UL standards		UL1004	
	cUL standards		cUL C22.2 No.100	

Concepts

New Product Information/
Motion Network LineupController
FeaturesServo System
FeaturesCX-Drive/
Motor Selection ProgramServomotors, and
Servo Drives
Selection GuideControllers
Position Control UnitsControllers
Motion Control Units

OMNUC G

OMNUC W

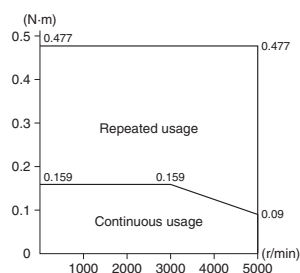
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Torque and Rotation Speed Characteristics

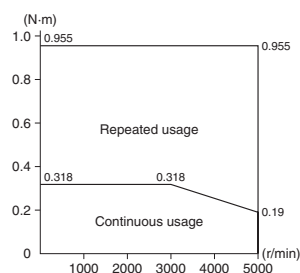
● 3,000-r/min Cylinder-type Servomotors (with a 200-VAC Servo Drive)

The following graphs show the characteristics with a 3-m standard cable and 200-V AC input.

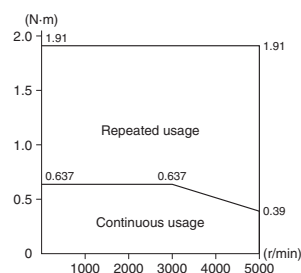
R88M-W05030H/T (50 W)



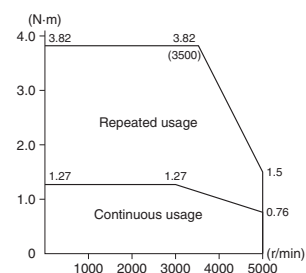
R88M-W10030H/T (100 W)



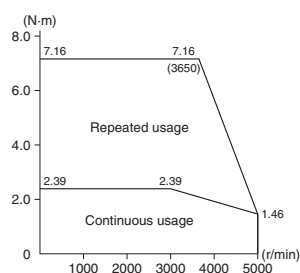
R88M-W20030H/T (200 W)



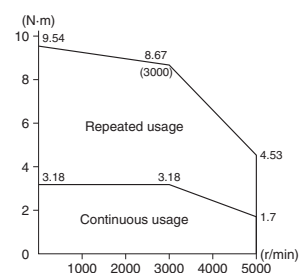
R88M-W40030H/T (400 W)



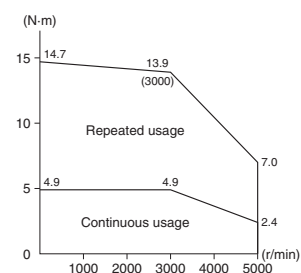
R88M-W75030H/T (750 W)



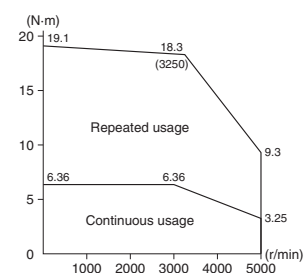
R88M-W1K030H/T (1 kW)



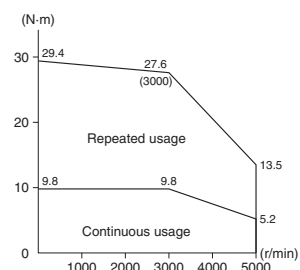
R88M-W1K530H/T (1.5 kW)



R88M-W2K030H/T (2 kW)



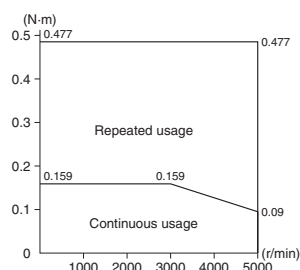
R88M-W3K030H/T (3 kW)



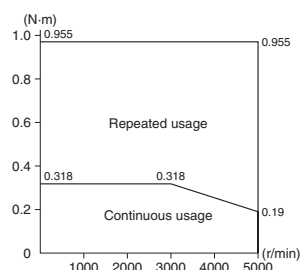
● 3,000-r/min Cylinder-type Servomotors (with a 100-VAC Servo Drive)

The following graphs show the characteristics with a 3-m standard cable and 100-V AC input.

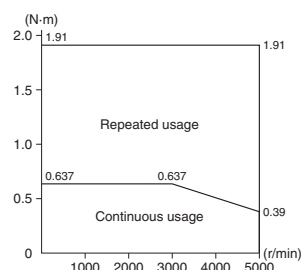
R88M-W05030H/T (50 W)



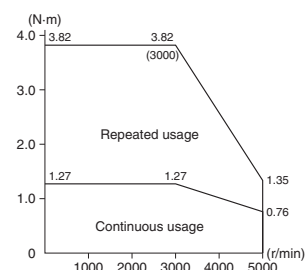
R88M-W10030H/T (100 W)



R88M-W20030H/T (200 W)



R88M-W40030H/T (400 W)



AC Servomotor Specifications (R88M-W)

● Performance Specifications

1,500-r/min Cylinder-type Servomotors

Power supply specification			200 V AC			
Model (R88M-) Unit			W45015T	W85015T	W1K315T	W1K815T
Applicable Servo Drive (R88D-)			WN05H-ML2	WN10H-ML2	WN15H-ML2	WN20H-ML2
Rated output	W		450	850	1300	1800
Rated torque	N·m		2.84	5.39	8.34	11.5
Rated rotation speed	r/min		1500			
Momentary maximum rotation speed	r/min		3000			
Momentary maximum torque	N·m		8.92	13.8	23.3	28.7
Rated current	A (rms)		3.8	7.1	10.7	16.7
Momentary maximum current	A (rms)		11	17	28	42
Rotor inertia	kg·m ² (GD ² /4)		7.24×10^{-4}	1.39×10^{-3}	2.05×10^{-3}	3.17×10^{-3}
Torque constant	N·m/A		0.82	0.83	0.84	0.73
Power rate	kW/s		11.2	20.9	33.8	41.5
Mechanical time constant	ms		5.0	3.1	2.8	2.2
Electrical time constant	ms		5.1	5.3	6.3	12.8
Allowable radial load	N		490	490	686	1176
Allowable thrust load	N		98	98	343	490
Weight	Without brake	kg	Approx. 5.5	Approx. 7.6	Approx. 9.6	Approx. 14
	With brake	kg	Approx. 7.5	Approx. 9.6	Approx. 12	Approx. 19
Radiation shield dimensions (material)			t20 × □400 (Fe)			t30 × □550 (Fe)
Applicable load inertia			5×			
Brake specifications	Brake inertia	kg·m ² (GD ² /4)	2.1×10^{-4}	2.1×10^{-4}	2.1×10^{-4}	8.5×10^{-4}
	Excitation voltage	V	24 VDC ±10%			
	Power consumption (at 20°C)	W	9.85	9.85	9.85	18.5
	Current consumption (at 20°C)	A	0.41	0.41	0.41	0.77
	Static friction torque	N·m	4.41 min.	12.7 min.	12.7 min.	43.1 min.
	Attraction time	ms	180 max.			
	Release time	ms	100 max.			
	Backlash		1° (reference value)			
	Rating	---	Continuous			
	Insulation grade	---	Type F			

● General Specifications

1,500-r/min Cylinder-type Servomotors

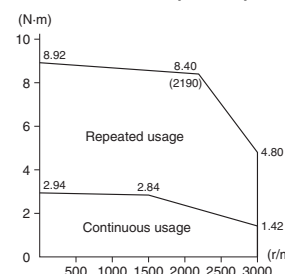
Item	Type	1,500-r/min Servomotors
Ambient operating temperature		0 to 40°C
Ambient operating humidity		20% to 80% (with no condensation)
Ambient storage temperature		−20 to 60°C
Ambient storage humidity		20% to 80% (with no condensation)
Storage and operating atmosphere		No corrosive gases.
Vibration resistance		10 to 2,500 Hz in X, Y, and Z directions with acceleration 24.5 m/s ² max.
Shock resistance		Acceleration 490 m/s ² max., in X, Y, and Z directions, two times
Insulation resistance		Between power line terminals and FG: 10 MΩ min. (at 500 V DC)
Dielectric strength		Between power line terminals and FG: 1,500 V AC for 1 min at 50/60 Hz
Run position		All directions
Insulation grade		Type F
Structure		Totally-enclosed self-cooling
Degree of protection		IP-67 (Excluding through-shaft portion)
Vibration grade		V-15
Mounting method		Flange-mounting
International standards	EC Directives	EN55011 class A group 1
	EMC Directive	EN61000-6-2
	Low-voltage Directive	IEC60034-8 IEC60034-8, EN60034-1, -5, -9
	UL standards	UL1004
	cUL standards	cUL C22.2 No.100

Torque and Rotation Speed Characteristics

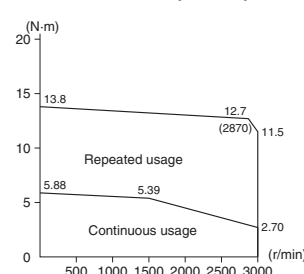
● 1,500-r/min Cylinder-type Servomotors (with a 200-VAC Servo Drive)

The following graphs show the characteristics with a 3-m standard cable and 200-V AC input.

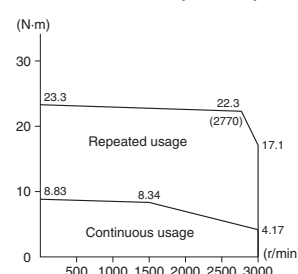
R88M-W45015T (450 W)



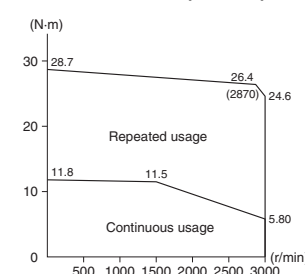
R88M-W85015T (850 W)



R88M-W1K315T (1.3 kW)



R88M-W1K815T (1.8 kW)



● Performance Specifications

1,000-r/min Cylinder-type Servomotors

Power supply specification			200 V AC				
Model (R88M-)			W30010H	W60010H	W90010H	W1K210H	W2K010H
Item	Unit		W30010T	W60010T	W90010T	W1K210T	W2K010T
Applicable Servo Drive (R88D-)			WN05H-ML2	WN10H-ML2	WN10H-ML2	WN15H-ML2	WN20H-ML2
Rated output		W	300	600	900	1200	2000
Rated torque		N·m	2.84	5.68	8.62	11.5	19.1
Rated rotation speed		r/min	1000				
Momentary maximum rotation speed		r/min	2000				
Momentary maximum torque		N·m	7.17	14.1	19.3	28.0	44.0
Rated current		A (rms)	3.0	5.7	7.6	11.6	18.5
Momentary maximum current		A (rms)	7.3	13.9	16.6	28	42
Rotor inertia		kg·m ² (GD ² /4)	7.24 × 10 ⁻⁴	1.39 × 10 ⁻³	2.05 × 10 ⁻³	3.17 × 10 ⁻³	4.60 × 10 ⁻³
Torque constant		N·m/A	1.03	1.06	1.21	1.03	1.07
Power rate		kW/s	11.2	23.2	36.3	41.5	79.4
Mechanical time constant		ms	5.1	3.8	2.8	2.0	1.7
Electrical time constant		ms	5.1	4.7	5.7	13.5	13.9
Allowable radial load		N	490	490	686	1176	1470
Allowable thrust load		N	98	98	343	490	490
Weight	Without brake	kg	Approx. 5.5	Approx. 7.6	Approx. 9.6	Approx. 14	Approx. 18
	With brake	kg	Approx. 7.5	Approx. 9.6	Approx. 12	Approx. 19	Approx. 23.5
Radiation shield dimensions (material)			t20 × □400 (Fe)			t30 × □550 (Fe)	
Applicable load inertia			5×				
Brake specifications	Brake inertia	kg·m ² (GD ² /4)	2.1 × 10 ⁻⁴	2.1 × 10 ⁻⁴	2.1 × 10 ⁻⁴	8.5 × 10 ⁻⁴	8.5 × 10 ⁻⁴
	Excitation voltage	V	24 VDC ±10%				
	Power consumption (at 20°C)	W	9.85	9.85	9.85	18.5	18.5
	Current consumption (at 20°C)	A	0.41	0.41	0.41	0.77	0.77
	Static friction torque	N·m	4.41 min.	12.7 min.	12.7 min.	43.1 min.	43.1 min.
	Attraction time	ms	180 max.				
	Release time	ms	100 max.				
	Backlash		1° (reference value)				
	Rating	---	Continuous				
Insulation grade		---	Type F				

● General Specifications

1,000-r/min Cylinder-type Servomotors

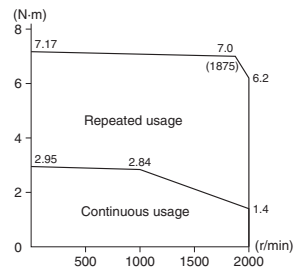
Item	Type	1,000-r/min Servomotors
Ambient operating temperature		0 to 40°C
Ambient operating humidity		20% to 80% (with no condensation)
Ambient storage temperature		−20 to 60°C
Ambient storage humidity		20% to 80% (with no condensation)
Storage and operating atmosphere		No corrosive gases.
Vibration resistance		10 to 2,500 Hz in X, Y, and Z directions with acceleration 24.5 m/s ² max.
Shock resistance		Acceleration 490 m/s ² max., in X, Y, and Z directions, two times
Insulation resistance		Between power line terminals and FG: 10 MΩ min. (at 500 V DC)
Dielectric strength		Between power line terminals and FG: 1,500 V AC for 1 min at 50/60 Hz
Run position		All directions
Insulation grade		Type F
Structure		Totally-enclosed self-cooling
Degree of protection		IP-67 (Excluding through-shaft portion)
Vibration grade		V-15
Mounting method		Flange-mounting
International standards	EMC Directives	EN55011 class A group 1
		EN61000-6-2
	Low-voltage Directive	IEC60034-8 IEC60034-8, EN60034-1, -5, -9
		UL standards
	cUL standards	UL1004 cUL C22.2 No.100

Torque and Rotation Speed Characteristics

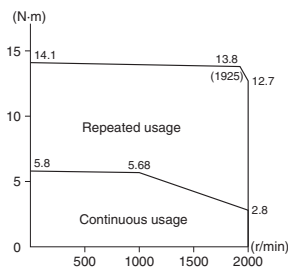
● 1,000-r/min Cylinder-type Servomotors (with a 200-VAC Servo Drive)

The following graphs show the characteristics with a 3-m standard cable and 200-V AC input.

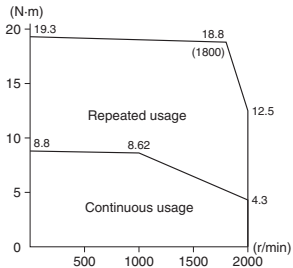
R88M-W30010H/T (300 W)



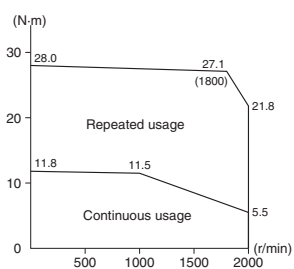
R88M-W60010H/T (600 W)



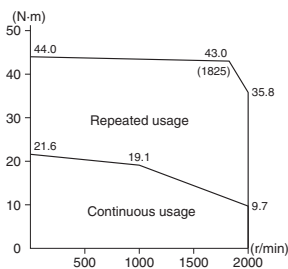
R88M-W90010H/T (900 W)



R88M-W1K210H/T (1.2 kW)



R88M-W2K010H/T (2 kW)



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

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● Performance Specifications Flat-type Servomotors

Power supply Specification			200 V AC (See note.)				
Item	Model (R88M-)		WP10030H	WP20030H	WP40030H	WP75030H	WP1K530H
	Unit		WP10030T	WP20030T	WP40030T	WP75030T	WP1K530T
Applicable Servo Drive (R88D-)	100 V AC		WN01L-ML2	WN02L-ML2	WN04L-ML2	---	---
	200 V AC		WN01H-ML2	WN02H-ML2	WN04H-ML2	WN08H-ML2	WN15H-ML2
Rated output	W		100	200	400	750	1500
Rated torque	N·m		0.318	0.637	1.27	2.39	4.77
Rated rotation speed	r/min		3000				
Momentary maximum rotation speed	r/min		5000				
Momentary maximum torque	N·m		0.955	1.91	3.82	7.16	14.3
Rated current	A (rms)		0.89	2.0	2.6	4.1	7.5
Momentary maximum current	A (rms)		2.8	6.0	8.0	13.9	23.0
Rotor inertia	kg·m ² (GD ² /4)		4.91×10^{-6}	1.93×10^{-5}	3.31×10^{-5}	2.10×10^{-4}	4.02×10^{-4}
Torque constant	N·m/A		0.392	0.349	0.535	0.641	0.687
Power rate	kW/s		20.6	21.0	49.0	27.1	56.7
Mechanical time constant	ms		0.53	0.54	0.36	0.66	0.46
Electrical time constant	ms		3.7	7.4	8.6	18	22
Allowable radial load	N		78	245	245	392	490
Allowable thrust load	N		49	68	68	147	147
Weight	Without brake	kg	Approx. 0.7	Approx. 1.4	Approx. 2.1	Approx. 4.2	Approx. 6.6
	With brake	kg	Approx. 0.9	Approx. 1.9	Approx. 2.6	Approx. 5.7	Approx. 8.1
Radiation shield dimensions (material)			t6 × □250 (Al)		t12 × □300 (Al)		
Applicable load inertia			25×	15×	7×	5×	5×
Brake specifications	Brake inertia	kg·m ² (GD ² /4)	2.9×10^{-6}	1.09×10^{-5}	1.0×10^{-5}	8.75×10^{-5}	8.75×10^{-5}
	Excitation voltage	V	24 VDC±10%				
	Power consumption (at 20°C)	W	6	5	7.6	7.5	10
	Current consumption (at 20°C)	A	0.25	0.21	0.32	0.31	0.42
	Static friction torque	N·m	0.4 min.	0.9 min.	1.9 min.	3.5 min.	7.1 min.
	Attraction time	ms	20 max.	20 max.	60 max.	20 max.	20 max.
	Release time	ms	40 max.	40 max.	20 max.	40 max.	40 max.
	Backlash		1° (reference value)				
	Rating	---	Continuous				
	Insulation grade	---	Type F				

Note: When using a W-series Servomotor with built-in MECHATROLINK-II communications, use a 200-VAC Servomotor regardless of whether the Servo Drive is 200 VAC or 100 VAC.

● General Specifications Flat-type Servomotors

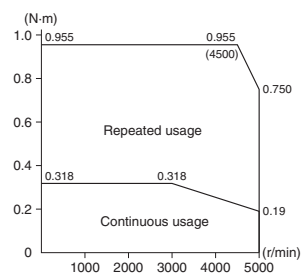
Type			3,000-r/min Flat-type Servomotors
Item			
Ambient operating temperature			0 to 40°C
Ambient operating humidity			20% to 80% (with no condensation)
Ambient storage temperature			−20 to 60°C
Ambient storage humidity			20% to 80% (with no condensation)
Storage and operating atmosphere			No corrosive gases.
Vibration resistance			10 to 2,500 Hz in X, Y, and Z directions with acceleration 49 m/s ² max.
Shock resistance			Acceleration 490 m/s ² max., in X, Y, and Z directions, two times
Insulation resistance			Between power line terminals and FG: 10 MΩ min. (at 500 V DC)
Dielectric strength			Between power line terminals and FG: 1,500 V AC for 1 min at 50/60 Hz
Run position			All directions
Insulation grade			Type B
Structure			Totally-enclosed self-cooling
Degree of protection			IP-55 (Excluding through-shaft portion)
Vibration grade			V-15
Mounting method			Flange-mounting
International standards	EC Directives	EMC Directive	EN55011 class A group 1 EN61000-6-2
		Low-voltage Directive	IEC60034-8 IEC60034-8, EN60034-1, -5, -9
	UL standards		UL1004
	cUL standards		cUL C22.2 No.100

Torque and Rotation Speed Characteristics

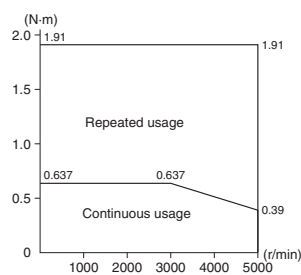
● Flat-type Servomotors (with a 200-VAC Servo Drive)

The following graphs show the characteristics with a 3-m standard cable and 200-V AC input

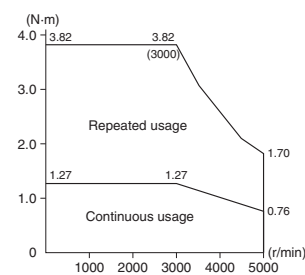
R88M-WP10030H/T (100 W)



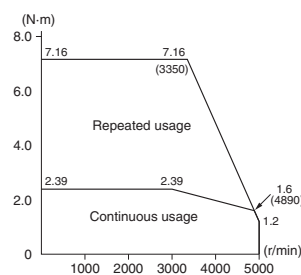
R88M-WP20030H/T (200 W)



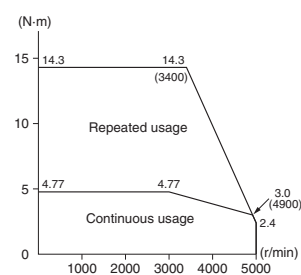
R88M-WP40030H/T (400 W)



R88M-WP75030H/T (750 W)



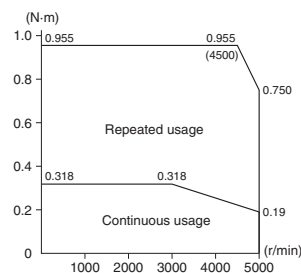
R88M-WP1K530H/T (1.5 kW)



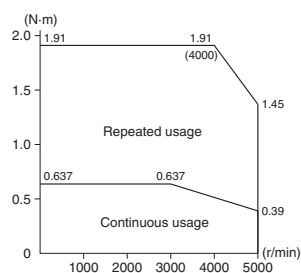
● Flat-type Servomotors (with a 100-VAC Servo Drive)

The following graphs show the characteristics with a 3-m standard cable and 100-V AC input

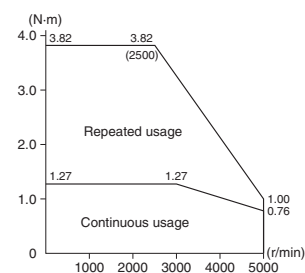
R88M-WP10030H/T (100 W)



R88M-WP20030H/T (200 W)



R88M-WP40030H/T (400 W)



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

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Decelerator Specifications (R7G-VRSF)

● Performance Specifications

Backlash: 3 Arcminutes Max.

Motor capacity	Gear ratio	Model (R7G)		Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia (See note 1.)	Allowable radial load (See note 2.)	Allowable thrust load
		For Cylinder-type Servomotor	For Flat-type Servomotor	r/min	N·m	%	r/min	N·m	kg·m ²	N	N
50 W	1/5	VRSFPB05B50	---	600	0.517	65	900	1.56	4.13×10^{-6}	392	196
	1/9	VRSFPB09B50	---	333	0.93	65	500	2.81	3.53×10^{-6}	441	220
	1/15	VRSFPB15B50	---	200	1.67	70	300	5.04	3.67×10^{-6}	588	294
	1/25	VRSFPB25B50	---	120	2.78	70	180	8.40	3.59×10^{-6}	686	343
100 W	1/5	VRSFPB05B100	VRSFPB05B100P	600	1.19	75	900	3.60	4.0×10^{-6}	392	196
	1/9	VRSFPB09B100	VRSFPB09B100P	333	2.29	80	500	6.91	3.43×10^{-6}	441	220
	1/15	VRSFPB15B100	VRSFPB15B100P	200	3.82	80	300	11.5	3.62×10^{-6}	588	294
	1/25	VRSFPB25C100	VRSFPB25C100P	120	6.36	80	180	19.2	3.92×10^{-6}	1323	661
200 W	1/5	VRSFPB05B200	VRSFPB05B200P	600	2.71	85	900	8.12	1.53×10^{-5}	392	196
	1/9	VRSFPB09C400	VRSFPB09C400P	333	3.78	66	500	11.3	2.68×10^{-5}	931	465
	1/15	VRSFPB15C400	VRSFPB15C400P	200	6.31	66	300	18.9	2.71×10^{-5}	1176	588
	1/25	VRSFPB25C200	VRSFPB25C200P	120	11.1	70	180	33.4	2.67×10^{-5}	1323	661
400 W	1/5	VRSFPB05C400	VRSFPB05C400P	600	5.40	85	900	16.2	3.22×10^{-5}	784	392
	1/9	VRSFPB09C400	VRSFPB09C400P	333	9.49	83	500	28.5	2.68×10^{-5}	931	465
	1/15	VRSFPB15C400	VRSFPB15C400P	200	15.8	83	300	47.6	2.71×10^{-5}	1176	588
	1/25	VRSFPB25D400	VRSFPB25D400P	120	26.4	83	180	79.3	2.79×10^{-5}	1617	808
750 W	1/5	VRSFPB05C750	VRSFPB05C750P	600	10.8	90	900	32.0	7.17×10^{-5}	784	392
	1/9	VRSFPB09D750	VRSFPB09D750P	333	18.3	85	500	54.3	6.50×10^{-5}	1176	588
	1/15	VRSFPB15D750	VRSFPB15D750P	200	30.5	85	300	90.5	7.09×10^{-5}	1372	686
	1/25	VRSFPB25E750	VRSFPB25E750P	120	50.8	85	180	151	7.05×10^{-5}	2058	1029

- Note:** 1. This the inertia for Cylinder-type Servomotors. For inertia values for Flat-type Servomotors, refer to *SMARTSTEP A Series User's Manual* (Cat. No. I533).
2. The allowable radial load is the value at the center of the shaft.
3. Use this Decelerator in combination with a Servomotor with a straight shaft and no key.
4. The Decelerator noise level is 79 dB.

Specifications for Servomotors with Decelerators

3,000-r/min Servomotors with Standard Decelerators (50 W to 3 kW)

Model			Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight	
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N	Without brake	With brake
50 W	1/5	R88M-W05030□-□G05BJ	600	0.557	70	800	1.67	3.60×10^{-6}	137	127	1.1	1.4
	1/9	R88M-W05030□-□G09BJ	333	1.00	70	444	3.01	3.30×10^{-6}	206	147	1.4	1.7
	1/21	R88M-W05030□-□G21BJ	143	2.67	80	190	8.01	1.80×10^{-6}	235	147	1.6	1.9
	1/33	R88M-W05030□-□G33BJ	91	4.20	80	121	12.6	1.3×10^{-6}	235	147	1.6	1.9
100 W	1/5	R88M-W10030□-□G05BJ	600	1.27	80	800	3.82	7.76×10^{-6}	167	147	1.4	1.7
	1/11	R88M-W10030□-□G11BJ	273	2.80	80	364	8.40	4.76×10^{-6}	216	147	1.7	2.0
	1/21	R88M-W10030□-□G21BJ	143	5.34	80	190	16.0	4.26×10^{-6}	392	235	2.7	3.0
	1/33	R88M-W10030□-□G33BJ	91	8.40	80	121	25.2	3.26×10^{-6}	431	235	2.7	3.0
200 W	1/5	R88M-W20030□-□G05BJ	600	2.55	80	800	7.64	3.35×10^{-5}	245	235	3.0	3.5
	1/11	R88M-W20030□-□G11BJ	273	5.96	85	364	17.9	8.50×10^{-6}	323	235	3.5	4.0
	1/21	R88M-W20030□-□G21BJ	143	11.4	85	190	34.1	1.10×10^{-5}	549	294	3.7	4.2
	1/33	R88M-W20030□-□G33BJ	91	17.9	85	121	53.6	6.50×10^{-6}	608	294	3.8	4.3
400 W	1/5	R88M-W40030□-□G05BJ	600	5.40	85	800	16.2	3.35×10^{-5}	245	235	3.6	4.1
	1/11	R88M-W40030□-□G11BJ	273	11.9	85	364	35.7	1.95×10^{-5}	441	294	4.3	4.8
	1/21	R88M-W40030□-□G21BJ	143	22.7	85	190	68.2	1.95×10^{-5}	568	314	4.7	5.2
	1/33	R88M-W40030□-□G33BJ	91	33.5	80	121	101	1.73×10^{-5}	657	314	7.1	7.6
750 W	1/5	R88M-W75030□-□G05BJ	600	10.2	85	800	30.4	5.83×10^{-5}	343	294	5.8	6.7
	1/11	R88M-W75030□-□G11BJ	273	22.3	85	364	67.0	5.28×10^{-5}	451	314	6.6	7.5
	1/21	R88M-W75030□-□G21BJ	143	42.7	85	190	128	5.93×10^{-5}	813	490	9.9	10.8
	1/33	R88M-W75030□-□G33BJ	91	67.0	85	121	201	2.63×10^{-5}	921	490	9.9	10.8
1 kW	1/5	R88M-W1K030□-□G05BJ	600	12.7	80	800	38.2	3.44×10^{-4}	833	1280	13	14.4
	1/9	R88M-W1K030□-□G09BJ	333	22.9	80	444	68.7	3.11×10^{-4}	980	1570	13	14.4
	1/20	R88M-W1K030□-□G20BJ	150	50.9	80	200	153	6.79×10^{-4}	2650	4220	30	31.4
	1/29	R88M-W1K030□-□G29BJ	103	73.8	80	138	221	4.88×10^{-4}	2940	4900	30	31.4
	1/45	R88M-W1K030□-□G45BJ	67	114	80	89	343	3.92×10^{-4}	3430	5690	30	31.4
1.5 kW	1/5	R88M-W1K530□-□G05BJ	600	19.6	80	800	58.8	3.44×10^{-4}	833	1280	14	15.7
	1/9	R88M-W1K530□-□G09BJ	333	35.3	80	444	106	4.77×10^{-4}	1960	3000	31	32.7
	1/20	R88M-W1K530□-□G20BJ	150	78.4	80	200	235	6.79×10^{-4}	2650	4220	31	32.7
	1/29	R88M-W1K530□-□G29BJ	103	114	80	138	341	4.88×10^{-4}	2940	4900	31	32.7
	1/45	R88M-W1K530□-□G45BJ	67	176	80	89	529	6.58×10^{-4}	8040	8830	51	52.5
2 kW	1/5	R88M-W2K030□-□G05BJ	600	25.4	80	800	76.4	3.44×10^{-4}	833	1280	15	16.5
	1/9	R88M-W2K030□-□G09BJ	333	45.8	80	444	138	4.77×10^{-4}	1960	3000	32	33.5
	1/20	R88M-W2K030□-□G20BJ	150	102	80	200	306	6.79×10^{-4}	2650	4220	32	33.5
	1/29	R88M-W2K030□-□G29BJ	103	148	80	138	443	1.03×10^{-3}	6860	7350	52	53.5
	1/45	R88M-W2K030□-□G45BJ	67	229	80	89	688	6.58×10^{-4}	8040	8830	52	53.5
3 kW	1/5	R88M-W3K030□-□G05BJ	600	39.2	80	800	118	1.02×10^{-3}	1670	1960	29	32
	1/9	R88M-W3K030□-□G09BJ	333	70.6	80	444	212	7.80×10^{-4}	1960	3000	36	39
	1/20	R88M-W3K030□-□G20BJ	150	157	80	200	470	2.02×10^{-3}	6080	6370	56	58.5
	1/29	R88M-W3K030□-□G29BJ	103	227	80	138	682	1.34×10^{-3}	6860	7350	56	58.5
	1/45	R88M-W3K030□-□G45BJ	67	353	80	89	1058	9.70×10^{-4}	8040	8830	56	58.5

Note: 1. The Decelerator inertia is the Servomotor shaft conversion value.

2. The enclosure rating for Servomotors with Decelerators is IP55 for 30- to 750-W models, and IP44 for 1- to 5-kW models.

3. The maximum momentary rotation speed for the motor shaft of Servomotors with Decelerators is 4,000 r/min.

4. The allowable radial loads are measured at a point 5 mm from the end of the shaft for 30- to 750-W Servomotors and in the center of the shaft for 1- to 5-kW Servomotors.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

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Junior

3,000-r/min Flat-style Servomotors with Standard Decelerators (100 W to 1.5 kW)

Model			Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight	
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N	Without brake	With brake
100 W	1/5	R88M-WP10030□-□G05BJ	600	1.27	80	800	3.82	9.39×10^{-6}	167	147	1.5	1.7
	1/11	R88M-WP10030□-□G11BJ	273	2.80	80	364	8.40	4.79×10^{-6}	216	147	1.5	1.7
	1/21	R88M-WP10030□-□G21BJ	143	5.34	80	190	16.0	4.29×10^{-6}	392	235	3.0	3.2
	1/33	R88M-WP10030□-□G33BJ	91	8.40	80	121	25.2	3.29×10^{-6}	431	235	3.0	3.2
200 W	1/5	R88M-WP20030□-□G05BJ	600	2.55	80	800	7.64	3.60×10^{-5}	245	235	3.5	4.0
	1/11	R88M-WP20030□-□G11BJ	273	5.96	85	364	17.9	8.80×10^{-6}	323	235	3.8	4.3
	1/21	R88M-WP20030□-□G21BJ	143	11.4	85	190	34.1	1.10×10^{-5}	549	294	4.1	4.6
	1/33	R88M-WP20030□-□G33BJ	91	17.9	85	121	53.6	6.50×10^{-6}	608	294	4.1	4.6
400 W	1/5	R88M-WP40030□-□G05BJ	600	5.40	85	800	16.2	3.60×10^{-5}	245	235	4.2	4.7
	1/11	R88M-WP40030□-□G11BJ	273	11.9	85	364	35.7	1.95×10^{-5}	441	294	4.8	5.3
	1/21	R88M-WP40030□-□G21BJ	143	22.7	85	190	68.2	1.95×10^{-5}	568	314	5.2	5.7
	1/33	R88M-WP40030□-□G33BJ	91	33.5	80	121	101	1.72×10^{-5}	657	314	7.7	8.2
750 W	1/5	R88M-WP75030□-□G05BJ	600	10.2	85	800	30.4	7.65×10^{-5}	343	294	6.9	8.4
	1/11	R88M-WP75030□-□G11BJ	273	22.3	85	364	67.0	5.23×10^{-5}	451	314	8.0	9.5
	1/21	R88M-WP75030□-□G21BJ	143	42.7	85	190	128	6.63×10^{-5}	813	490	11.0	12.5
	1/33	R88M-WP75030□-□G33BJ	91	67.0	85	121	201	4.35×10^{-5}	921	490	11.0	12.5
1.5 kW	1/5	R88M-WP1K530□-□G05BJ	600	20.3	85	800	60.8	1.54×10^{-4}	353	314	11.6	13.1
	1/11	R88M-WP1K530□-□G11BJ	273	44.6	85	364	134	2.09×10^{-4}	647	490	13.7	15.2
	1/21	R88M-WP1K530□-□G21BJ	143	80.1	80	190	*270	1.98×10^{-4}	1274	882	23.6	25.1
	1/33	R88M-WP1K530□-□G33BJ	91	126	80	121	*353	1.12×10^{-4}	1274	882	23.6	25.1

- Note:** 1. The Decelerator inertia is the Servomotor shaft conversion value.
2. The degree of protection for Servomotors with Decelerators is IP55.
3. The maximum momentary rotation speed for the motor shaft of Servomotors with Decelerators is 4,000 r/min.
4. The maximum momentary torque values marked by asterisks are the maximum allowable torque for the Decelerators. Use torque limits so that these values are not exceeded.
5. The allowable radial loads are measured at a point 5 mm from the end of the shaft.

1,000-r/min Servomotors with Standard Decelerators (300 W to 2 kW)

Model			Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight	
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N	Without brake	With brake
300 W	1/5	R88M-W30010□-□G05BJ	200	11.4	80	400	28.7	1.26×10^{-4}	883	1280	14	16
	1/9	R88M-W30010□-□G09BJ	111	20.4	80	222	51.6	9.40×10^{-5}	980	1570	14	16
	1/20	R88M-W30010□-□G20BJ	50	45.4	80	100	115	1.40×10^{-4}	1270	2260	16	18
	1/29	R88M-W30010□-□G29BJ	34	65.9	80	69	166	2.76×10^{-4}	2940	4900	31	33
	1/45	R88M-W30010□-□G45BJ	22	102	80	44	258	1.81×10^{-4}	3430	5690	31	33
600 W	1/5	R88M-W60010□-□G05BJ	200	22.7	80	400	56.4	1.30×10^{-4}	833	1280	16	18
	1/9	R88M-W60010□-□G09BJ	111	40.9	80	222	*82.5	9.00×10^{-5}	980	1570	16	18
	1/20	R88M-W60010□-□G20BJ	50	90.9	80	100	226	4.70×10^{-4}	2650	4220	33	35
	1/29	R88M-W60010□-□G29BJ	34	132	80	69	327	2.80×10^{-4}	2940	4900	33	35
	1/45	R88M-W60010□-□G45BJ	22	204	80	44	508	4.50×10^{-4}	8040	8830	53	55
900 W	1/5	R88M-W90010□-□G05BJ	200	34.5	80	400	77.2	3.40×10^{-4}	833	1280	18	20.4
	1/9	R88M-W90010□-□G09BJ	111	62.1	80	222	139	4.80×10^{-4}	1960	3000	35	37.4
	1/20	R88M-W90010□-□G20BJ	50	138	80	100	309	6.90×10^{-4}	2650	4220	35	37.4
	1/29	R88M-W90010□-□G29BJ	34	200	80	69	448	1.04×10^{-3}	6860	7350	55	57.4
	1/45	R88M-W90010□-□G45BJ	22	310	80	44	695	6.70×10^{-4}	8040	8830	55	57.4
1.2 kW	1/5	R88M-W1K210□-□G05BJ	200	46.0	80	400	112	1.02×10^{-3}	1670	1960	32	37
	1/9	R88M-W1K210□-□G09BJ	111	82.8	80	222	202	7.80×10^{-4}	1960	3000	39	44
	1/20	R88M-W1K210□-□G20BJ	50	184	80	100	448	2.02×10^{-3}	6080	6370	59	64
	1/29	R88M-W1K210□-□G29BJ	34	267	80	69	650	1.34×10^{-3}	6860	7350	59	64
	1/45	R88M-W1K210□-□G45BJ	22	414	80	44	1008	9.70×10^{-4}	8040	8830	59	64
2 kW	1/5	R88M-W2K010□-□G05BJ	200	76.4	80	400	176	1.02×10^{-3}	1670	1960	36	41.5
	1/9	R88M-W2K010□-□G09BJ	111	138	80	222	317	7.80×10^{-4}	1960	3000	43	48.5
	1/20	R88M-W2K010□-□G20BJ	50	306	80	100	704	2.02×10^{-3}	6080	6370	63	68.5

- Note:** 1. The Decelerator inertia is the Servomotor shaft conversion value.
2. The degree of protection for Servomotors with Decelerators is IP44.
3. The maximum momentary torque values marked by asterisks are the maximum allowable torque for the Decelerators. Use torque limits so that these values are not exceeded.
4. The allowable radial load is the value at the center of the shaft.

1,500-r/min Servomotors with Standard Decelerators (450 W to 1.8 kW)

Model			Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight	
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N	Without brake	With brake
											kg	kg
450 W	1/5	R88M-W45015T-□G05BJ	300	11.4	80	600	35.7	1.26×10^{-4}	883	1280	14	16
	1/9	R88M-W45015T-□G09BJ	167	20.4	80	333	64.2	9.40×10^{-5}	980	1570	14	16
	1/20	R88M-W45015T-□G20BJ	75	45.4	80	150	143	4.66×10^{-4}	2650	4220	31	33
	1/29	R88M-W45015T-□G29BJ	52	65.9	80	103	207	2.76×10^{-4}	2940	4900	31	33
	1/45	R88M-W45015T-□G45BJ	33	102	80	67	321	1.81×10^{-4}	3430	5690	31	33
850 W	1/5	R88M-W85015T-□G05BJ	300	21.6	80	600	55.2	1.30×10^{-4}	883	1280	16	18
	1/9	R88M-W85015T-□G09BJ	167	38.8	80	333	*74.5	9.00×10^{-5}	980	1570	16	18
	1/20	R88M-W85015T-□G20BJ	75	86.2	80	150	221	4.70×10^{-4}	2650	4220	33	35
	1/29	R88M-W85015T-□G29BJ	52	125	80	103	320	2.80×10^{-4}	2940	4900	33	35
	1/45	R88M-W85015T-□G45BJ	33	194	80	67	497	4.50×10^{-4}	8040	8830	53	55
1.3 kW	1/5	R88M-W1K315T-□G05BJ	300	33.4	80	600	93.2	7.20×10^{-4}	1670	1960	28	30.4
	1/9	R88M-W1K315T-□G09BJ	167	60.0	80	333	168	4.80×10^{-4}	1960	3000	35	37.4
	1/20	R88M-W1K315T-□G20BJ	75	133	80	150	373	6.90×10^{-4}	2650	4220	35	37.4
	1/29	R88M-W1K315T-□G29BJ	52	193	80	103	541	1.04×10^{-3}	6860	7350	55	57.4
	1/45	R88M-W1K315T-□G45BJ	33	300	80	67	839	6.70×10^{-4}	8040	8830	55	57.4
1.8 kW	1/5	R88M-W1K815T-□G05BJ	300	46.0	80	600	115	1.02×10^{-3}	1670	1960	32	37
	1/9	R88M-W1K815T-□G09BJ	167	82.8	80	333	207	7.80×10^{-4}	1960	3000	39	44
	1/20	R88M-W1K815T-□G20BJ	75	184	80	150	459	2.02×10^{-3}	6080	6370	59	64
	1/29	R88M-W1K815T-□G29BJ	52	267	80	103	666	1.34×10^{-3}	6860	7350	59	64

- Note:** 1. The Decelerator inertia is the Servomotor shaft conversion value.
2. The degree of protection for Servomotors with Decelerators is IP44.
3. The maximum momentary torque values marked by asterisks are the maximum allowable torque for the Decelerators. Use torque limits so that these values are not exceeded.
4. The allowable radial load is the value at the center of the shaft.

3,000-r/min Servomotors with Economy Decelerators (100 to 750 W)

Model			Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight	
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N	Without brake	With brake
											kg	kg
100 W	1/5	R88M-W10030□-□G05CJ	600	1.19	75	1000	3.58	4.08×10^{-6}	392	196	1.05	1.35
	1/9	R88M-W10030□-□G09CJ	333	2.29	80	556	6.88	3.43×10^{-6}	441	220	1.05	1.35
	1/15	R88M-W10030□-□G15CJ	200	3.82	80	333	11.5	3.62×10^{-6}	588	294	1.2	1.5
	1/25	R88M-W10030□-□G25CJ	120	6.36	80	200	19.1	3.92×10^{-6}	1323	661	2.2	2.5
200 W	1/5	R88M-W20030□-□G05CJ	600	2.71	85	1000	8.12	1.53×10^{-5}	392	196	1.82	2.32
	1/9	R88M-W20030□-□G09CJ	333	3.78	66	556	11.3	2.68×10^{-5}	931	465	2.8	3.3
	1/15	R88M-W20030□-□G15CJ	200	6.31	66	333	18.9	2.71×10^{-5}	1176	588	3.2	3.7
	1/25	R88M-W20030□-□G25CJ	120	11.1	70	200	33.4	2.67×10^{-5}	1323	661	3.2	3.7
400 W	1/5	R88M-W40030□-□G05CJ	600	5.40	85	1000	16.2	3.22×10^{-5}	784	392	3.4	3.9
	1/9	R88M-W40030□-□G09CJ	333	9.49	83	556	28.5	2.68×10^{-5}	931	465	3.4	3.9
	1/15	R88M-W40030□-□G15CJ	200	15.8	83	333	47.6	2.71×10^{-5}	1176	588	3.8	4.3
	1/25	R88M-W40030□-□G25CJ	120	26.4	83	200	79.3	2.79×10^{-5}	1617	808	4.9	5.4
750 W	1/5	R88M-W75030□-□G05CJ	600	10.8	90	1000	32.2	7.17×10^{-5}	784	392	5.5	6.4
	1/9	R88M-W75030□-□G09CJ	333	18.2	85	556	54.7	6.50×10^{-5}	1176	588	6.8	7.7
	1/15	R88M-W75030□-□G15CJ	200	30.4	85	333	91.2	7.09×10^{-5}	1372	686	7.2	8.1
	1/25	R88M-W75030□-□G25CJ	120	50.7	85	200	152	7.05×10^{-5}	2058	1029	10.6	11.5

- Note:** 1. The Decelerator inertia indicates the Servomotor shaft conversion value.
2. The degree of protection for Servomotors with Decelerators is IP44.
3. The allowable radial loads are measured in the center of the shaft.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

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3,000-r/min Flat-style Servomotors with Economy Decelerators (100 to 750 W)

Model			Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load	Weight	
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N	Without brake	With brake
100 W	1/5	R88M-WP10030□-□G05CJ	600	1.19	75	1000	3.58	1.60×10^{-5}	392	196	1.42	1.62
	1/9	R88M-WP10030□-□G09CJ	333	2.29	80	556	6.88	1.37×10^{-5}	441	220	1.42	1.62
	1/15	R88M-WP10030□-□G15CJ	200	3.82	80	333	11.5	3.38×10^{-6}	588	294	1.47	1.67
	1/25	R88M-WP10030□-□G25CJ	120	6.36	80	200	19.1	3.68×10^{-6}	1323	661	2.5	2.7
200 W	1/5	R88M-WP20030□-□G05CJ	600	2.71	85	1000	8.12	1.53×10^{-5}	392	196	2.25	2.75
	1/9	R88M-WP20030□-□G09CJ	333	3.78	66	556	11.3	2.56×10^{-5}	931	465	3.2	3.7
	1/15	R88M-WP20030□-□G15CJ	200	6.31	66	333	18.9	2.71×10^{-5}	1176	588	3.6	4.1
	1/25	R88M-WP20030□-□G25CJ	120	11.1	70	200	33.4	2.67×10^{-5}	1323	661	3.6	4.1
400 W	1/5	R88M-WP40030□-□G05CJ	600	5.40	85	1000	16.2	3.23×10^{-5}	784	392	3.9	4.4
	1/9	R88M-WP40030□-□G09CJ	333	9.49	83	556	28.5	2.56×10^{-5}	931	465	3.9	4.4
	1/15	R88M-WP40030□-□G15CJ	200	15.8	83	333	47.6	2.71×10^{-5}	1176	588	4.3	4.8
	1/25	R88M-WP40030□-□G25CJ	120	26.4	83	200	79.3	2.79×10^{-5}	1617	808	5.4	5.9
750 W	1/5	R88M-WP75030□-□G05CJ	600	10.8	90	1000	32.2	7.17×10^{-5}	784	392	6.7	8.2
	1/9	R88M-WP75030□-□G09CJ	333	18.2	85	556	54.7	6.50×10^{-5}	1176	588	8.0	9.5
	1/15	R88M-WP75030□-□G15CJ	200	30.4	85	333	91.2	6.86×10^{-5}	1372	686	8.4	9.9
	1/25	R88M-WP75030□-□G25CJ	120	50.7	85	200	152	7.05×10^{-5}	2058	1029	11.8	13.3

Note: 1. The Decelerator inertia indicates the Servomotor shaft conversion value.
2. The degree of protection for Servomotors with Decelerators is IP44.
3. The allowable radial loads are measured in the center of the shaft.

Connections

■ **Standard Wiring Diagram: R88D-WN□□-ML2**

● Single-phase 200 to 230 VAC (or Single-phase 100 to 115 VAC)

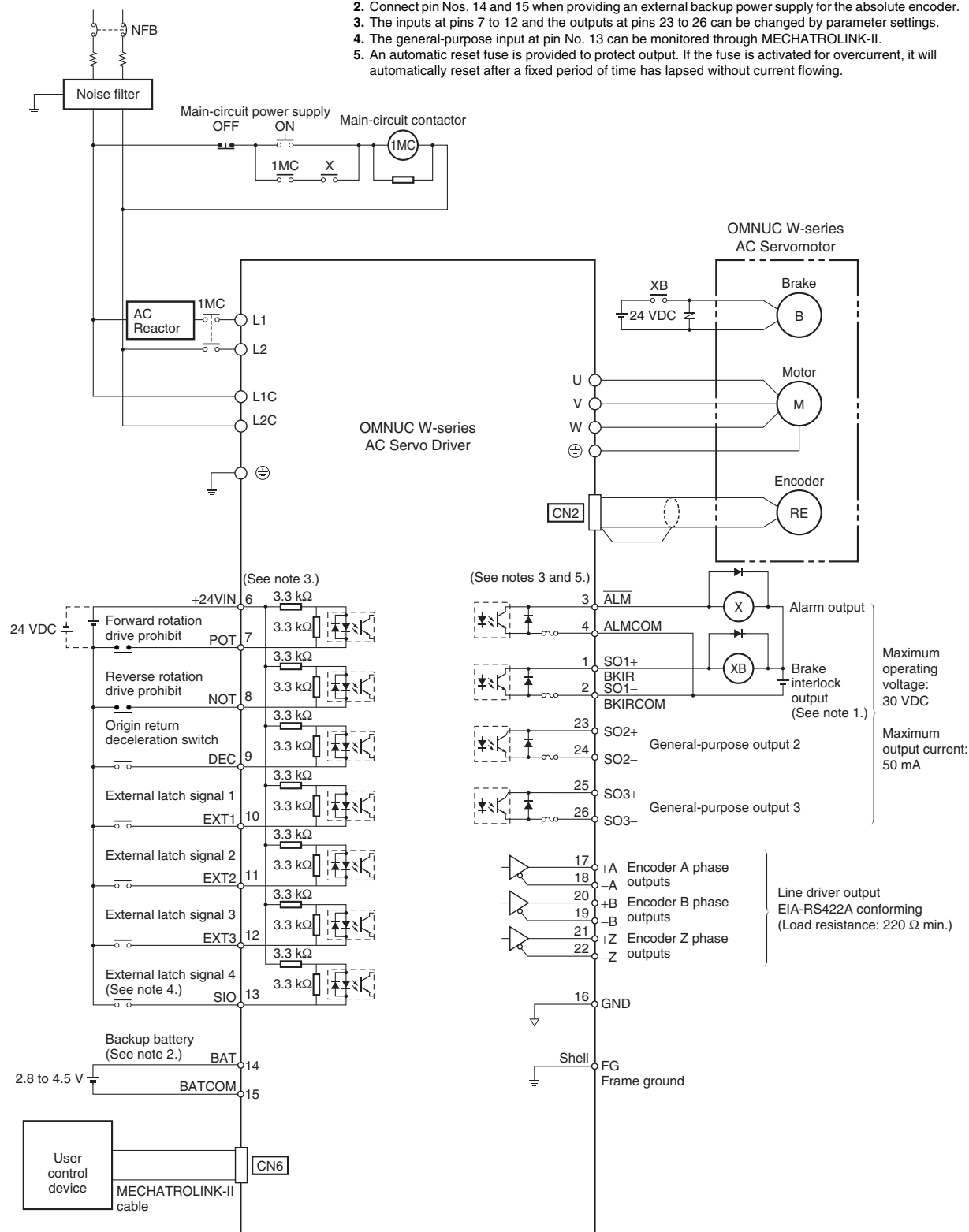
Note: 1. Set by user parameter Pn50F.

1. Set by user parameter: n5061.
2. Connect pin Nos. 14 and 15 when providing an external backup power supply for the absolute encoder.

3. The inputs at pins 7 to 12 and the outputs at pins 23 to 26 can be changed by parameter settings.

4. The general-purpose input at pin No. 13 can be monitored through MECHATROLINK-II.

5. An automatic reset fuse is provided to protect output. If the fuse is activated for overcurrent, it will automatically reset after a fixed period of time has lapsed without current flowing.



- **Three-phase 200 to 230 V AC**

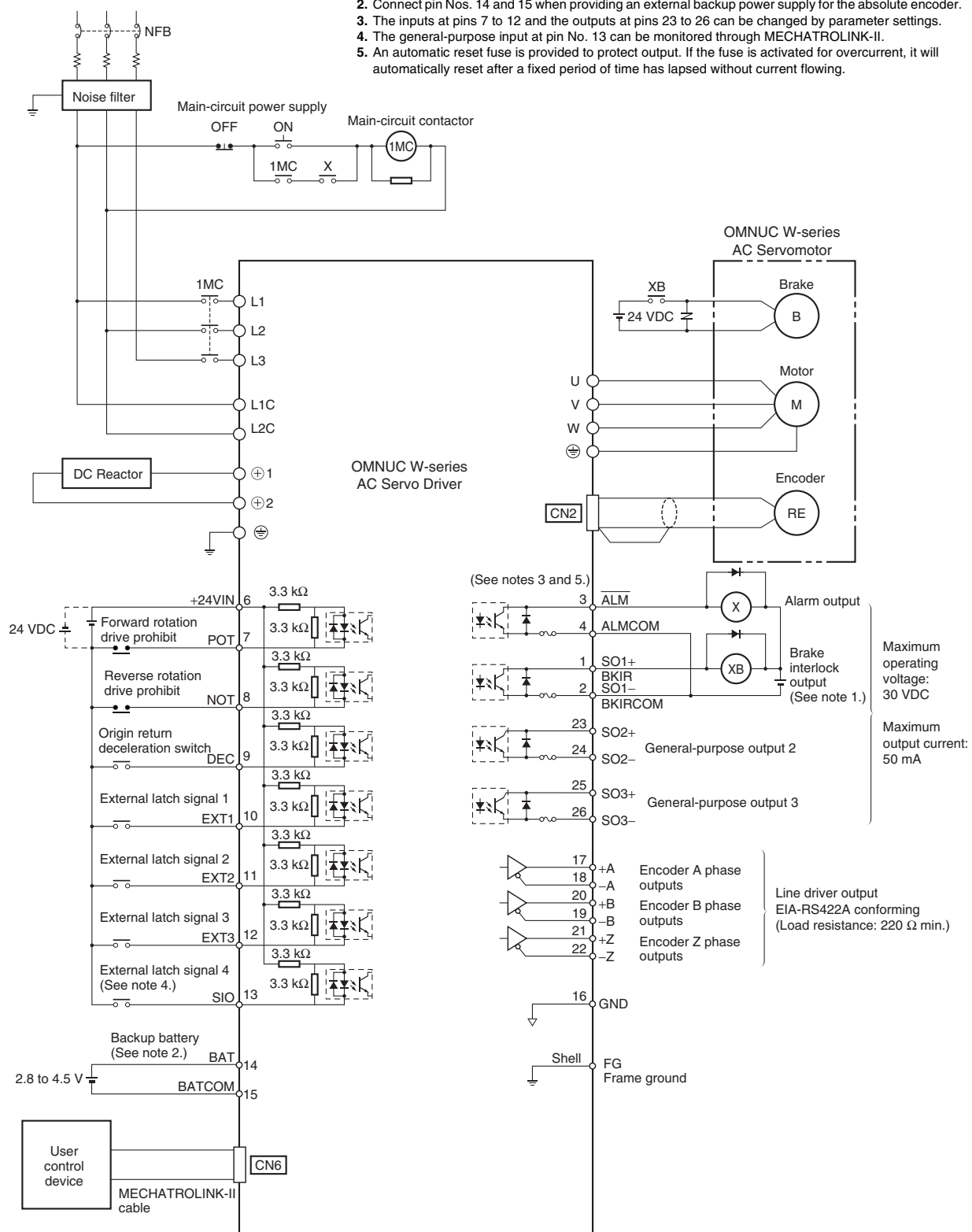
Note: 1. Set by user parameter Pn50F.

1. Set by user parameter n501 :
2. Connect pin Nos. 14 and 15 when providing an external backup power supply for the absolute encoder.

2. Connect pin 100: V_{CC} to a source when providing an external backup power supply for the associated channel.
3. The inputs at pins 7 to 12 and the outputs at pins 23 to 26 can be changed by parameter settings.

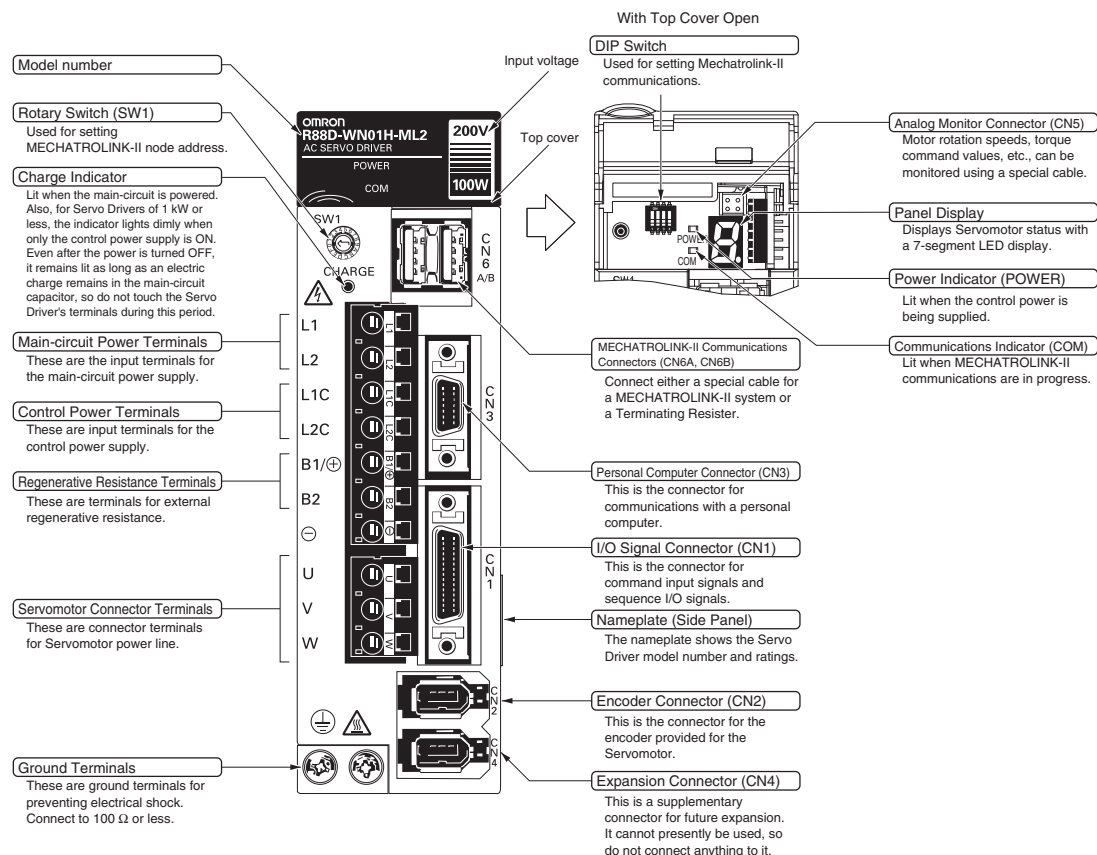
4. The general-purpose input at pin No. 13 can be monitored through MECHATROLINK-II.

5. An automatic reset fuse is provided to protect output. If the fuse is activated for overcurrent, it will automatically reset after a fixed period of time has lapsed without current flowing.



Components and Functions

■ Terminal Block and Connector Functions



● Terminal Block Specifications

Signal	Name	Functions
L1	Main circuits power supply input	R88D-WN□H-ML2 (50 to 400 W): Single-phase 200/230 VAC (170 to 253 V), 50/60 Hz (No L3 terminal)
L2		R88D-WN08H-ML2 (750 W): Single-phase 200/230 VAC (170 to 253 V), 50/60 Hz
L3		Note: The L3 terminal is not used, so do not connect it. R88D-WN□H-ML2 (500 W to 3.0 kW): Single-phase 200/230 VAC (170 to 253 V), 50/60 Hz R88D-WN□L-ML2 (50 to 400 W): Single-phase 100/115 VAC (85 to 127 V), 50/60 Hz (No L3 terminal)
⊖1	DC Reactor terminal for power supply harmonic control	R88D-WN□H-ML2 (500 W to 3.0 kW) Normally short-circuit between ⊖1 and ⊖2. If harmonic control measures are required, connect a DC Reactor between ⊖1 and ⊖2.
⊖2		
B1/⊕	Main circuit positive terminal	Used for DC power supply input. The R88D-WN□H-ML2 (500 W to 3.0 kW) does not have a ⊖ terminal. Use the ⊖2 terminal.
⊖	Main circuit negative terminal	
L1C	Control circuits power supply input	R88D-WN□H-ML2: Single-phase 200/230 V AC (170 to 253 V AC) 50/60 Hz
L2C		R88D-WN□L-ML2: Single-phase 100/115 V AC (85 to 127 V AC) 50/60 Hz
B1/⊕	External regeneration resistance connection terminal	R88D-WN□H-ML2 (50 W to 400 W) R88D-WN□L-ML2 (50 W to 400 W) This terminal does not normally need to be connected. If regenerative energy is high, connect an External Regeneration Resistor between B1 and B2. (There is no B3 terminal.)
B2		R88D-WN□H-ML2 (500 W to 3.0 kW) Short-circuit between B2 and B3. If regenerative energy is high, remove the short bar between B2 and B3 and connect an External Regeneration Resistor between B1 and B2.
B3		
U	Servomotor connection terminals	Red
V		White
W		Blue
⊕		Green/Yellow
⊕	Frame ground	This is the ground terminal.

● Encoder Connector Specifications (CN2)

Pin No.	Signal	Name
1	E5V	Encoder power supply, +5 V
2	E0V	Encoder power supply, GND
3	BAT+	Battery + ABS
4	BAT-	Battery - ABS
5	S+	Encoder phase +S input
6	S-	Encoder phase -S input
Shell	FG	Shield ground

● CN1 Control Inputs

Pin No.	Signal	Name	Function and interface
7 to 9	DEC (9) [SI3]	Origin return deceleration switch signal	This is the deceleration input for origin return.
	POT (7) [SI1]	Forward drive prohibit input	Forward rotation overtravel input.
	NOT (8) [SI2]	Reverse drive prohibit input	Reverse rotation overtravel input.
10 to 12	EXT1 (10) [SI4]	External latch signal 1	This is the external signal input for latching the present feedback pulse counter.
	EXT2 (11) [SI5]	External latch signal 2	
	EXT3 (12) [SI6]	External latch signal 3	
6	+24VIN	Sequence signal control power supply	This is the 24-VDC power supply input terminal for sequence inputs (pin Nos. 7 to 13).
14	BAT (+)	Backup battery inputs	These are the battery connection terminals for the absolute encoder power backup. Note: Connect the battery either to these terminals or to the absolute encoder battery cable.
15	BAT (–)		
13	(Not allocated) [SI0]	General-purpose input	This terminal can be monitored in the MECHATROLINK-II I/O monitor field.

Note: The numbers in parentheses () show the default pin number allocations. The terminal name is shown in brackets [].

● CN1 Control Outputs

Pin No.	Signal	Name	Function and interface
3	ALM	Alarm output	When an alarm is generated for the Servo Drive, the output is OFF.
4	ALMCOM		
1 to 2 23 to 26	INP1	Positioning completed output 1	ON when the position deviation is within positioning completed range 1 (Pn522).
	INP1COM		
	INP2	Positioning completed output 2	ON when the position deviation is within positioning completed range 2 (Pn524).
	INP2COM		
	VCMP	Speed conformity output	ON when the Servomotor speed error is within the speed conformity signal output range (Pn503).
	VCMPCOM		
	TGON	Servomotor rotation detection output	ON when the Servomotor rotation speed exceeds the value set for the Servomotor rotation detection speed (Pn502).
	TGONCOM		
	READY	Servo ready output	ON if no errors are discovered after powering the main circuits.
	READYCOM		
	CLIMT	Current limit detection output	ON if the output current is limited.
	CLIMTCOM		
	VLIMT	Speed limit detection output	ON if the speed is limited.
	VLIMTCOM		
	BKIR (1) [SO1+]	Brake interlock output	Holding brake timing signals are output according to user parameters Pn506, Pn507, and Pn508.
	BKIRCOM (2) [SO1–]		
	WARN	Warning output	ON when an overload warning or regeneration overload warning is detected.F
	WARNCOM		
	(Not allocated) (23) [SO2+]	General-purpose outputs	Allocations are set by the user parameters.
	(Not allocated) (24) [SO2–]		
	(Not allocated) (25) [SO3+]		
	(Not allocated) (26) [SO3–]		
Shell	FG	Frame ground	Connection terminal for cable's shielded wire and FG line.

Note: The numbers in parentheses () show the default pin number allocations. Terminal names are shown in brackets [].

Parameter

● Function Selection Parameters (from Pn000)

Parameter name	Explanation
Function selection basic switches	Reverse rotation
	Unit No. setting
Function selection application switches 1	Stop selection if an alarm occurs when Servomotor is OFF
	Stop selection when drive prohibited is input
	AC/DC power input selection
Function selection application switches 2	Torque command input change (during speed control)
	Speed command input change (during torque control)
	Operation switch when using absolute encoder
Function selection application switches 6	Analog monitor 1 (AM) signal selection
	Analog monitor 1 signal multiplier selection
Function selection application switches 7	Analog monitor 2 (NM) signal selection
	Analog monitor 2 signal multiplier selection
Function selection application switches 8	Lowered battery voltage alarm/warning selection
	Warning detection selection

● Servo Gain Parameters (from Pn100)

Parameter name	Explanation (See note 1.)
Speed loop	Adjusts speed loop response.
Speed loop integration constant	Speed loop integral time constant
Position loop gain	Adjusts position loop response.
Inertia ratio	Set using the ratio between the machine system inertia and the Servomotor rotor inertia.
Speed loop gain 2	Adjusts speed loop response (enabled by gain switching input).
Speed loop integration constant 2	Speed loop integral time constant (enabled by gain switching input).
Position loop gain 2	Adjusts position loop response (enabled by gain switching input).
Bias rotational speed	Sets position control bias.
Bias addition band	Sets the position control bias operation start using deviation counter pulse width.
Feed-forward amount	Position control feed-forward compensation value
Feed-forward command filter	Sets position control feed-forward command filter.
Speed control setting	P control switching conditions
	Speed control loop switching
	Position loop control method
P control switching (torque command)	Sets level of torque command to switch from PI control to P control.
P control switching (speed command)	Sets level of speed command to switch from PI control to P control.
P control switching (acceleration command)	Sets level of acceleration command to switch from PI control to P control.
P control switching (deviation pulse)	Sets level of deviation pulses to switch from PI control to P control.
Normal autotuning switches	Normal autotuning method
	Speed feedback compensation function selection
Speed feedback compensating gain	Adjusts speed loop feedback gain.
Position integral time constant	Position loop integral time constant
Gain switching time 1	Switching time from No. 1 gain to No. 2 gain
Gain switching time 2	Switching time from No. 2 gain to No. 1 gain
Gain switching waiting time 1	The time from when gain switching condition A is satisfied until switching from the No. 1 gain to the No. 2 gain begins.
Gain switching waiting time 2	The time from when gain switching condition B is satisfied until switching from the No. 2 gain to the No. 1 gain begins.
Automatic gain changeover related switches 1	Gain switching selection switch
	Gain switching condition A
	Gain switching condition B
Predictive control selection switches	Predictive control selection
	Predictive control type
Predictive control acceleration/deceleration gain	Adjusts acceleration and deceleration response for predictive control.
Predictive control weighting ratio	Adjusts position deviation for predictive control.
Servo rigidity	Adjusts the Servo rigidity for the No. 1 gain.
Servo rigidity 2	Adjusts the Servo rigidity for the No. 2 gain.
Speed feedback filter time constant	Sets the filter time constant for No. 1 gain speed feedback.
Speed feedback filter time constant 2	Sets the filter time constant for No. 2 gain speed feedback.
Torque command filter time constant 2	Sets the filter time constant for the torque command.
Utility control switches	Integral compensation processing
Utility integral gain	Adjusts the auxiliary integral responsive.
Position proportional gain	Adjusts the position proportional responsive.
Speed integral gain	Adjusts the speed integral responsive.
Speed proportional gain	Adjusts the speed proportional responsive.

Note: 1. Explanation for parameters set using 5 digits.
2. Explanation for parameters requiring each digit No. to be set separately.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

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● Position Control Parameters (from Pn200)

Parameter name	Explanation
Absolute encoder multi-turn limit setting	Sets the multi-turn limit for when a Servomotor with an absolute encoder is used.
Position control settings 2	Backlash compensation selection
Electronic gear ratio G1 (numerator)	Sets the pulse rate for the command pulses and Servomotor movement distance. $0.001 \leq \text{Pn20E/Pn210} \leq 1000$
Electronic gear ratio G2 (denominator)	
Encoder divider rate	Sets the number of output pulses per Servomotor rotation.
Backlash compensation amount	Mechanical system backlash amount (the mechanical gap between the drive shaft and the shaft being driven)
Backlash compensation time constant	Sets the backlash compensation time constant.

● Speed Control Parameters (from Pn300)

Parameter name	Explanation
Jog speed	Sets rotation speed during jog operation.
Soft start acceleration time	Sets acceleration time during speed control soft start.
Soft start deceleration time	Sets deceleration time during speed control soft start.
Speed feedback filter time constant	Sets constant during filter of speed feedback.
Vibration detection switches	Vibration detection selection
Vibration detection sensitivity	Sets the vibration detection sensitivity.
Vibration detection level	Sets the vibration detection level.

● Torque Control Parameters (from Pn400)

Parameter name	Explanation
1st step 1st torque command filter time constant	Sets the filter time constant for internal torque commands.
Forward torque limit	Forward rotation output torque limit (rated torque ratio).
Reverse torque limit	Reverse rotation output torque limit (rated torque ratio).
Forward rotation external current limit	Output torque limit during input of forward rotation current limit (rated torque ratio)
Reverse rotation external current limit	Output torque limit during input of reverse rotation current limit (rated torque ratio)
Emergency stop torque	Deceleration torque when an error occurs (rated torque ratio)
Speed limit	Sets the speed limit in torque control mode.
Torque command setting	Selects notch filter 1 function.
	Selects notch filter 2 function.
Notch filter 1 frequency	Sets notch filter 1 frequency for torque command.
Notch filter 1 Q value	Sets Q value of notch filter 1.
Notch filter 2 frequency	Sets notch filter 2 frequency for torque command.
Notch filter 2 Q value	Sets Q value of notch filter 2.
2nd step 2nd torque command filter frequency	Sets the filter frequency for internal torque commands.
2nd step 2nd torque command filter Q value	Sets the torque command filter Q value.
3rd step torque command filter time constant	Sets the filter time constant for internal torque commands.
1st step 2nd torque command filter time constant	Sets the filter time constant for No. 2 gain internal torque commands.
Damping for vibration suppression on stopping	Sets the vibration suppression value while stopped.
Vibration suppression starting time	Sets the time from when the position command becomes 0 until damping for vibration suppression on stopping begins.
Gravity compensation torque	Sets the gravity compensation torque.
Sweep torque command amplitude	Sets the sweep torque command amplitude.

● Sequence Parameters (from Pn500)

Parameter name	Explanation
Rotation speed for motor rotation detection	Sets the number of rotations for the Servomotor rotation detection output (TGON).
Speed conformity signal output width	Sets the allowable fluctuation (number of rotations) for the speed conformity output (VCMP).
Brake timing 1	Sets the delay from the brake command to the Servomotor turning OFF.
Brake command speed	Sets the number of rotations for outputting the brake command.
Brake timing 2	Sets the delay time from the Servomotor turning OFF to the brake command output.
Momentary hold time	Sets the time during which alarm detection is disabled when a power failure occurs.
Input signal selections 1	POT (forward drive prohibited input) signal Input terminal allocation
Input signal selections 2	NOT (reverse drive prohibited input) signal Input terminal allocation
Output signal selections 1	INP1 (positioning completed 1) signal output terminal allocation
	VCMP (speed conformity) signal output terminal allocation
	TGON (servomotor rotation detection) signal output terminal allocation
	READY (servo ready) signal output terminal allocation
Output signal selections 2	CLIMT (current limit detection) signal output terminal allocation
	VLIMIT (speed limit detection) signal output terminal allocation
	BKIR (brake interlock) signal output terminal allocation
	WARN (warning) signal output terminal allocation
Output signal selections 3	INP2 (positioning completed 2) signal output terminal allocation
Input signal selections 5	DEC signal input terminal allocation
	EXT1 signal input terminal allocation
	EXT2 signal input terminal allocation
	EXT3 signal input terminal allocation
Output signal reverse	Output signal reverse for CN1 pins 1, 2
	Output signal reverse for CN1 pins 23, 24
	Output signal reverse for CN1 pins 25, 26
Deviation counter overflow warning level	Sets the detection level for the deviation counter overflow warning. (A warning is output for Pn520 × Pn51E/100 or higher.)
Deviation counter overflow level	Sets the deviation counter overflow alarm detection level. $Pn520 \geq (\text{Max. feed speed [command unit/s]} / Pn102) \times 2.0$
Positioning completed range 1	Setting range for positioning completed range 1 (INP1)
Positioning completed range 2	Setting range for positioning completed range 2 (INP2)
Deviation counter overflow level at Servo-ON	Sets the deviation counter overflow alarm detection level for Servo ON.
Deviation counter overflow warning level at Servo-ON	Sets the deviation counter overflow warning detection level for Servo ON.
Speed limit level at Servo-ON	Sets the speed limit for when the Servo turns ON with position deviation accumulated.
Program JOG operation related switches	Program JOG operating pattern
Sets the program JOG movement distance.	Sets the program JOG movement distance.

Parameter name	Explanation
Program JOG movement speed	Sets the program JOG operation movement speed.
Program JOG acceleration/deceleration time	Sets the acceleration/deceleration time for program JOG operation.
Program JOG waiting time	Sets the delay time from the program JOG operation start input until operation starts.
Number of program JOG movements	Sets the number of repetitions of the program JOG operations.
Gain limit	Sets the gain limit.
Analog monitor 1 offset voltage	Sets the analog monitor 1 offset voltage.
Analog monitor 2 offset voltage	Sets the analog monitor 2 offset voltage.

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

● Other Parameters (from Pn600)

Parameter name	Explanation
Regeneration resistor capacity (See note 1.)	Setting for regeneration resistance load ratio monitoring calculations
Communications control	MECHATROLINK-II communications check mask
	Warning check mask
	Communications error count at single transmission
Function selection application 6 (software LS)	Software limit function
	Software limit check using reference
Zero point width	Sets the origin position detection range.
Forward software limit	Sets the software limit for the positive direction. Note: Pn806 must be set lower than Pn804.
Reverse software limit	Sets the software limit for the negative direction. Note: Pn806 must be set lower than Pn804.
Absolute encoder zero point position offset	Sets the encoder position and machine coordinate system offsets for when an absolute encoder is used.
First step linear acceleration parameter	Sets the step 1 acceleration for when two-step acceleration is used.
Second step linear acceleration parameter	Sets the step 2 acceleration for when two-step acceleration is executed, or the one-step acceleration parameter for when one-step acceleration is executed.
Acceleration parameter switching speed	Sets the switching speed for the step 1 and step 2 acceleration when two-step acceleration is executed. Note: When used as one-step acceleration, 0 must be set.
First step linear deceleration parameter	Sets the step 1 deceleration for when two-step deceleration is used.
Second step linear deceleration parameter	Sets the step 2 deceleration for when two-step deceleration is executed, or the one-step deceleration parameter for when one-step deceleration is executed.
Deceleration parameter switching speed	Sets the switching speed for the step 1 and step 2 deceleration when two-step deceleration is executed. Note: When used as one-step deceleration, 0 must be set.
Exponential acceleration/ deceleration bias	Sets the bias for when an exponential filter is used for the position command filter.
Exponential acceleration/ deceleration time constant	Sets the time constant for when an exponential filter is used for the position command filter.
Moving average time	Sets the average movement time for when S-curve acceleration/ deceleration is used, and an average movement filter is used for the position command filter.
Final travel distance for external positioning	Sets the distance from the external signal input position when external positioning is executed. Note: For a negative direction or if the distance is short, operation is reversed after decelerating to a stop.
Zero point return mode settings	Zero point return direction
Zero point return approach speed 1	Sets the origin search speed after the deceleration limit switch signal turns ON.
Zero point return approach speed 2	Sets the origin search speed after the deceleration limit switch signal turns OFF.
Final travel distance to return to zero point	Sets the distance from the latch signal input position to the origin, for when origin search is executed. Note: If the final travel distance is in the opposite direction from the origin return direction or if the distance is short, opera-

Note: 1. The normal setting is 0. When using an External Regeneration Resistor, set the External Regeneration Resistor capacity (W).

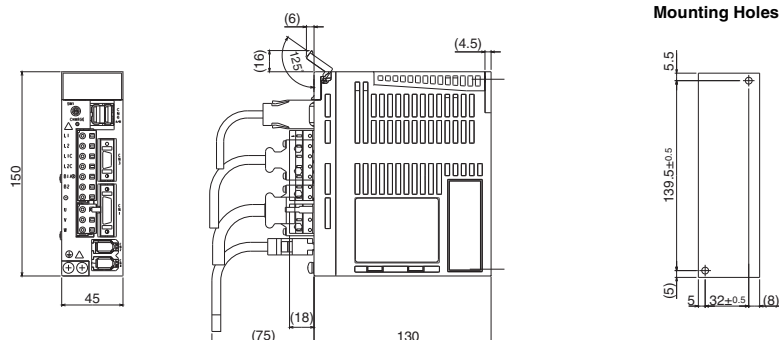
2. The upper limit is the maximum output capacity (W) of the applicable Servo Drive.

Dimensions

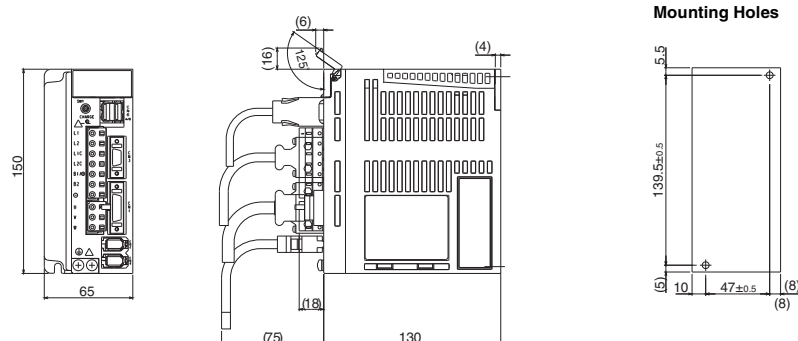
(Unit: mm)

● AC Servo Drives

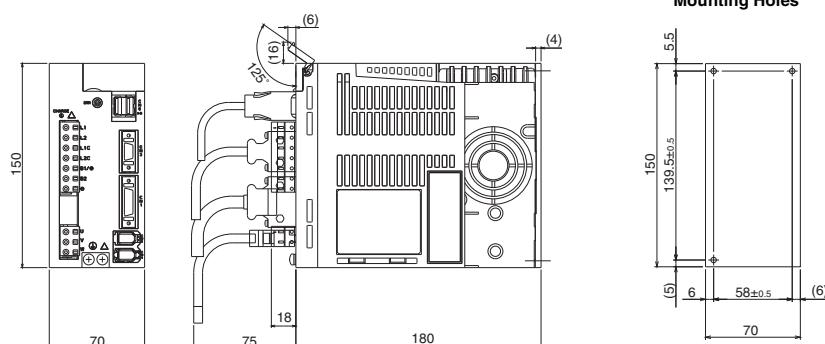
- 200 V AC: R88D-WNA5H-ML2/WN01H-ML2/WN02H-ML2 (50 W/100 W/200 W)
- 100 V AC: R88D-WNA5L-ML2/WN01L-ML2/WN02L-ML2 (50 W/100 W/200 W)



• 200 V AC: R88D-WN04H-ML2 (400 W)



• 100 V AC: R88D-WN04L-ML2 (400 W)



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

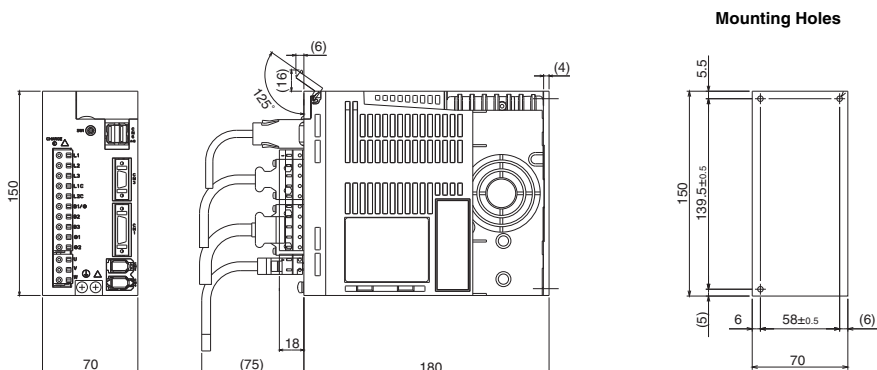
Controllers
Motion Control Units

OMNUC G

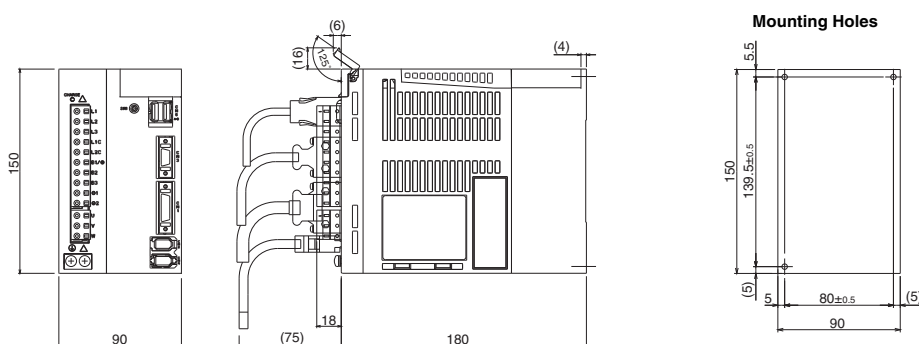
OMNUC W

SMARTSTEP
Junior

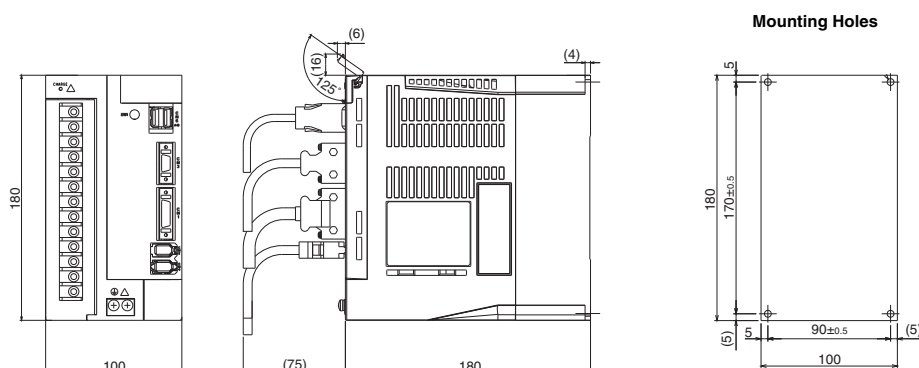
• 200 V AC: R88D-WN05H-ML2/WN08H-ML2/WN10H-ML2 (500 W/750 W/1 kW)



• 200 V AC: R88D-WN15H-ML2 (1.5 kW)



• 200 V AC: R88D-WN20H-ML2/WN30H-ML2 (2 kW/3 kW)



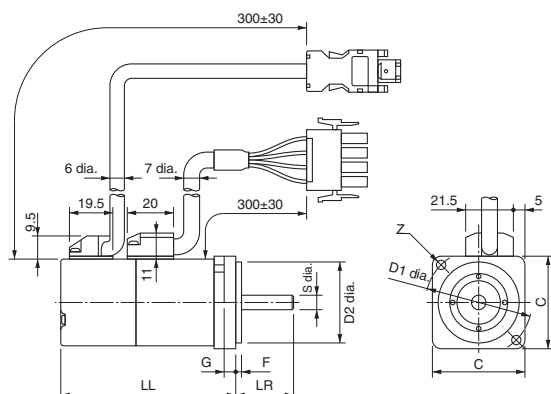
● AC Servomotors

3,000-r/min Cylinder-type Servomotors without a Brake

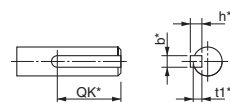
- 200 V AC: 50 W/100 W

R88M-W05030H(-S1)/W10030H(-S1)

R88M-W05030T(-S1)/W10030T(-S1)



Dimensions of shaft end with key (-S1)



*These are the dimensions for the R88M-W□-S1 (with key).

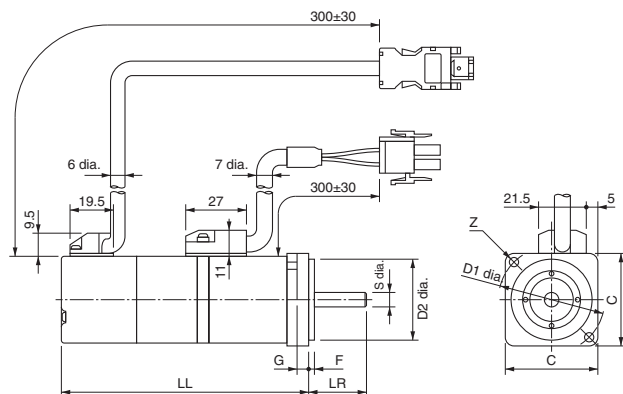
Dimensions (mm)		LL	LR	Flange dimensions					Shaft end dimensions				
Model				C	D1	D2	F	G	Z	S	QK*	b*	h*
R88M-W05030□(-S1)	77	25	40	46	30 ^{h7}	2.5	5	Two, 4.3 dia.	6 ^{h6}	14	2	2	1.2
R88M-W10030□(-S1)	94.5								8 ^{h6}		3	3	1.8

3,000-r/min Cylinder-type Servomotors with a Brake

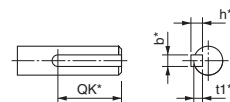
- 200 V AC: 50 W/100 W

R88M-W05030H-B(S1)/W10030H-B(S1)

R88M-W05030T-B(S1)/W10030T-B(S1)



*Dimensions of shaft end with key (-BS1)



*These are the dimensions for the R88M-W□-BS1 (with key).

Model	Dimensions (mm)	LL	LR	Flange dimensions					Shaft end dimensions					
				C	D1	D2	F	G	Z	S	QK*	b*	h*	t1*
R88M-W05030□-B(S1)		108.5	25	40	46	30 ^{h7}	2.5	5	Two, 4.3 dia.	6 ^{h6}	14	2	2	1.2
R88M-W10030□-B(S1)		135							8 ^{h6}	3		3	1.8	

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

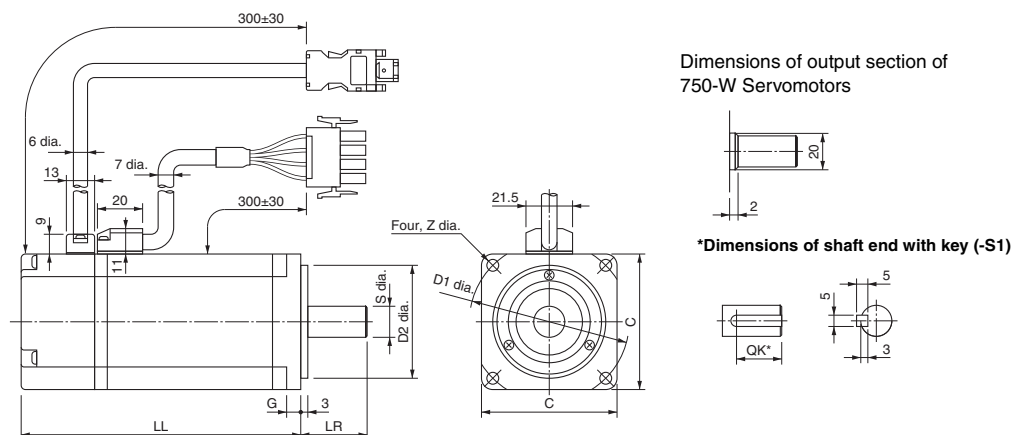
SMARTSTEP
Junior

3,000-r/min Cylinder-type Servomotors without a Brake

- 200 V AC: 200 W/400 W/750 W

R88M-W20030H(-S1)/W40030H(-S1)/W75030H(-S1)

R88M-W20030T(-S1)/W40030T(-S1)/W75030T(-S1)



*These are the dimensions for the R88M-W□-S1 (with key).

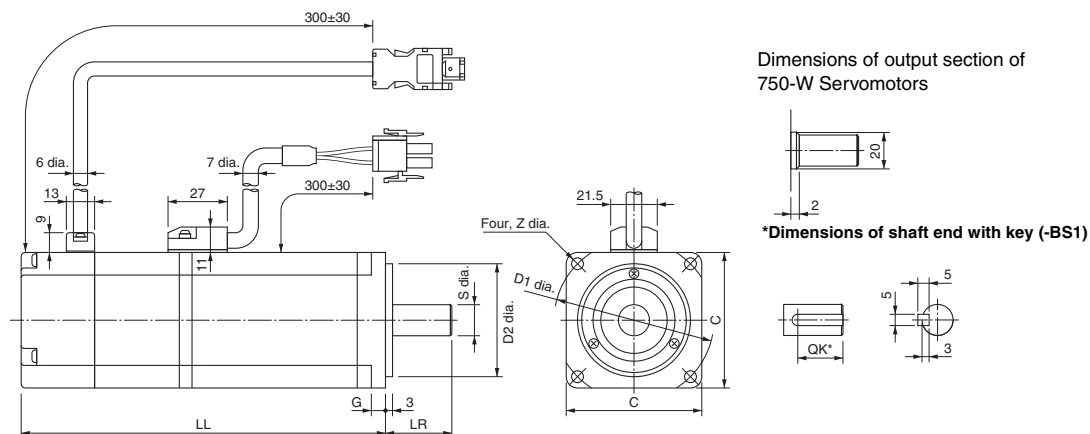
Model	Dimensions (mm)		Flange dimensions						Shaft end dimensions	
	LL	LR	C	D1	D2	F	G	Z	S	QK*
R88M-W20030□(-S1)	96.5	30	60	70	50 ^{h7}	3	6	Four, 5.5 dia.	14 ^{h6}	20
R88M-W40030□(-S1)	124.5									
R88M-W75030□(-S1)	145	40	80	90	70 ^{h7}	3	8	Four, 7 dia.	16 ^{h6}	30

3,000-r/min Cylinder-type Servomotors with a Brake

- 200 V AC: 200 W/400 W/750 W

R88M-W20030H-B(S1)/W40030H-B(S1)/W75030H-B(S1)

R88M-W20030T-B(S1)/W40030T-B(S1)/W75030T-B(S1)



*These are the dimensions for the R88M-W□-BS1 (with key).

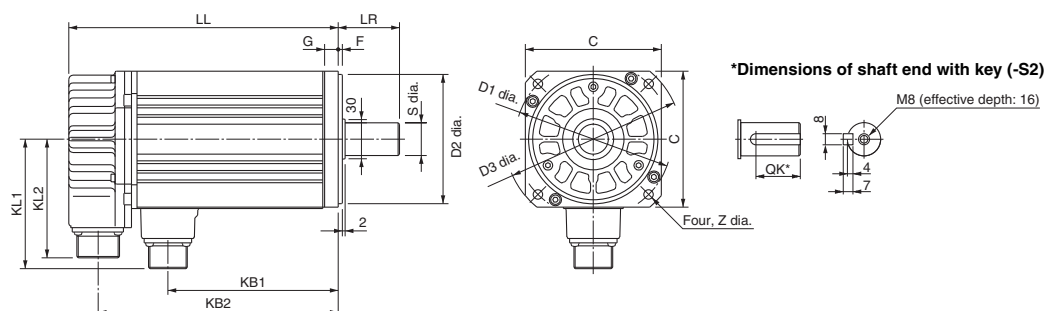
Model	Dimensions (mm)		Flange dimensions						Shaft end dimensions	
	LL	LR	C	D1	D2	F	G	Z	S	QK*
R88M-W20030□-B(S1)	136	30	60	70	50 ^{h7}	3	6	Four, 5.5 dia.	14 ^{h6}	20
R88M-W40030□-B(S1)	164									
R88M-W75030□-B(S1)	189.5	40	80	90	70 ^{h7}	3	8	Four, 7 dia.	16 ^{h6}	30

3,000-r/min Cylinder-type Servomotors without a Brake

- 200 V AC: 1 kW/1.5 kW/2 kW/3 kW

R88M-W1K030H-S2/W1K530H-S2/W2K030H-S2/W3K030H-S2

R88M-W1K030T-S2/W1K530T-S2/W2K030T-S2/W3K030T-S2



*These are the dimensions for the R88M-W□-S2 (with key and tap).

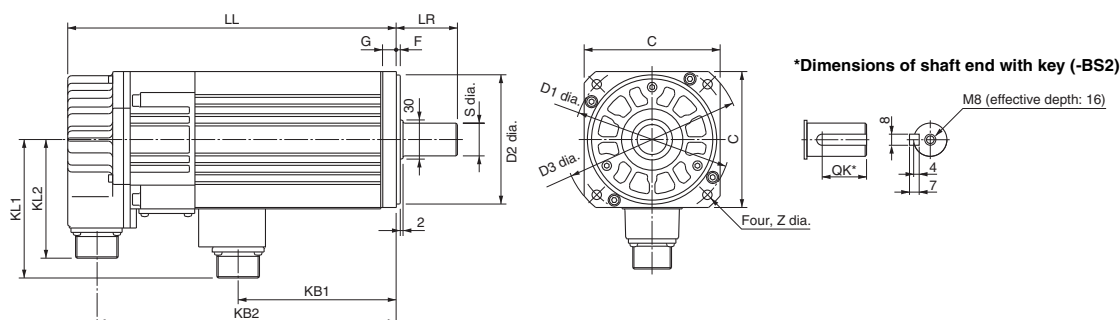
Dimensions (mm) Model	LL	LR	KB1	KB2	KL1	KL2	Flange dimensions							Shaft end dimensions	
							C	D1	D2	D3	F	G	Z	S	QK*
R88M-W1K030□-S2	149	45	76	128	96	88	100	115	95 ^{h7}	130	3	10	7	24 ^{h6}	32
R88M-W1K530□-S2	175		102	154											
R88M-W2K030□-S2	198		125	177											
R88M-W3K030□-S2	199	63	124	178	114	88	130	145	110 ^{h7}	165	6	12	9	28 ^{h6}	50

3,000-r/min Cylinder-type Servomotors with a Brake

- 200 V AC: 1 kW/1.5 kW/2 kW/3 kW

R88M-W1K030H-BS2/W1K530H-BS2/W2K030H-BS2/W3K030H-BS2

R88M-W1K030T-BS2/W1K530T-BS2/W2K030T-BS2/W3K030T-BS2



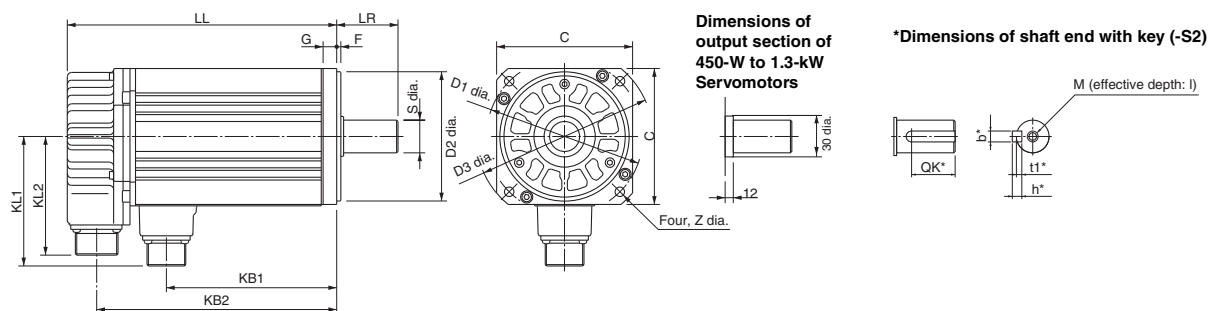
*These are the dimensions for the R88M-W□-BS2 (with key and tap).

Dimensions (mm) Model	LL	LR	KB1	KB2	KL1	KL2	Flange dimensions							Shaft end dimensions	
							C	D1	D2	D3	F	G	Z	S	QK*
R88M-W1K030□-BS2	193	45	67	171	102	88	100	115	95 ^{h7}	130	3	10	7	24 ^{h6}	32
R88M-W1K530□-BS2	219		93	197											
R88M-W2K030□-BS2	242		116	220											
R88M-W3K030□-BS2	237	63	114	216	119	88	130	145	110 ^{h7}	165	6	12	9	28 ^{h6}	50

1,500-r/min Cylinder-type Servomotors without a Brake

- 200 V AC: 450 W/850 W/1.3 kW/1.8 kW

R88M-W45015T(-S2)/W85015T(-S2)/W1K315T(-S2)/W1K815T(-S2)



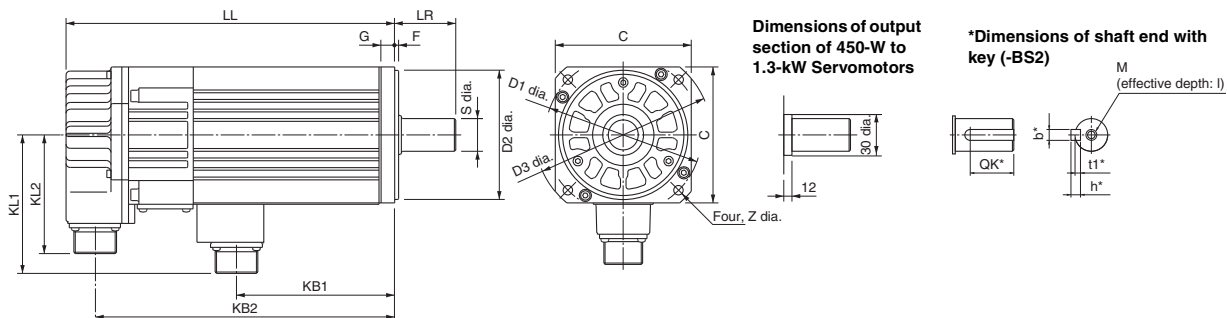
*These are the dimensions for the R88M-W□-S2 (with key and tap).

Model	Dimensions (mm)						Flange dimensions							Shaft end dimensions						
	LL	LR	KB 1	KB 2	KL 1	KL 2	C	D1	D2	D3	F	G	Z	S	QK*	b*	h*	t1*	M	I
R88M-W45015T□(-S2)	138		65	117										19 ^{h6}	25	5	5	3	M5	12
R88M-W85015T□(-S2)	161	58	88	140	109	88	130	145	110 ^{h7}	165	6	12	9	22 ^{h6}	25	6	6	3.5	M5	12
R88M-W1K315T□(-S2)	185		112	164																
R88M-W1K815T□(-S2)	166	79	89	144	140	88	180	200	114.3 ^{0-0.025}	230	3.2	18	13.5	35 ^{+0.01-0}	60	10	8	5	M12	25

1,500-r/min Cylinder-type Servomotors with a Brake

- 200 V AC: 450 W/850 W/1.3 kW/1.8 kW

R88M-W45015T-B(S2)/W85015T-B(S2)/W1K315T-B(S2)/W1K815T-B(S2)



*These are the dimensions for the R88M-W□-BS2 (with key and tap).

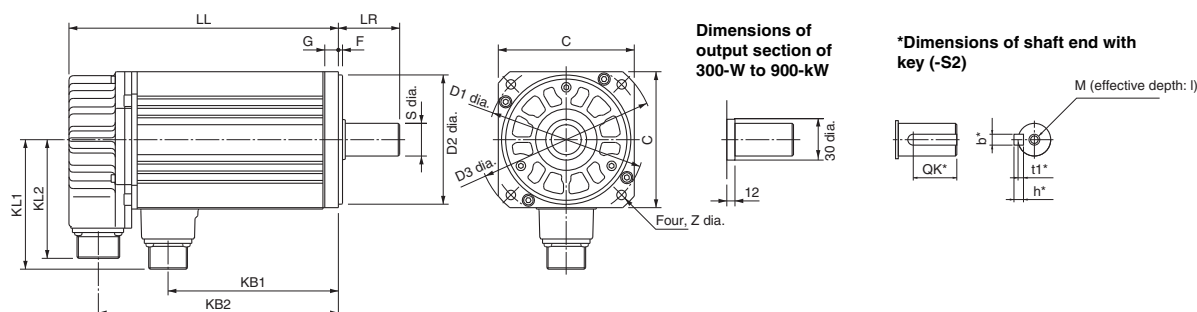
Model	Dimensions (mm)						Flange dimensions							Shaft end dimensions						
	LL	LR	KB1	KB2	KL1	KL2	C	D1	D2	D3	F	G	Z	S	QK*	b*	h*	t1*	M	I
R88M-W45015T-B(S2)	176		56	154										19 ^{h6}	25	5	5	3	M5	12
R88M-W85015T-B(S2)	199	58	79	177	120	88	130	145	110 ^{h7}	165	6	12	9	22 ^{h6}	25	6	6	3.5	M5	12
R88M-W1K315T-B(S2)	223		103	201																
R88M-W1K815T-B(S2)	217	79	79	195	146	88	180	200	114.3 ^{0-0.025}	230	3.2	18	13.5	35 ^{+0.01-0}	60	10	8	5	M12	25

1,000-r/min Cylinder-type Servomotors without a Brake

• 200 V AC: 300 W/600 W/900 W/1.2 kW/2 kW

R88M-W30010H-S2/W60010H-S2/W90010H-S2/W1K210H-S2/W2K010H-S2

R88M-W30010T-S2/W60010T-S2/W90010T-S2/W1K210T-S2/W2K010T-S2



*These are the dimensions for the R88M-W□-S2 (with key and tap).

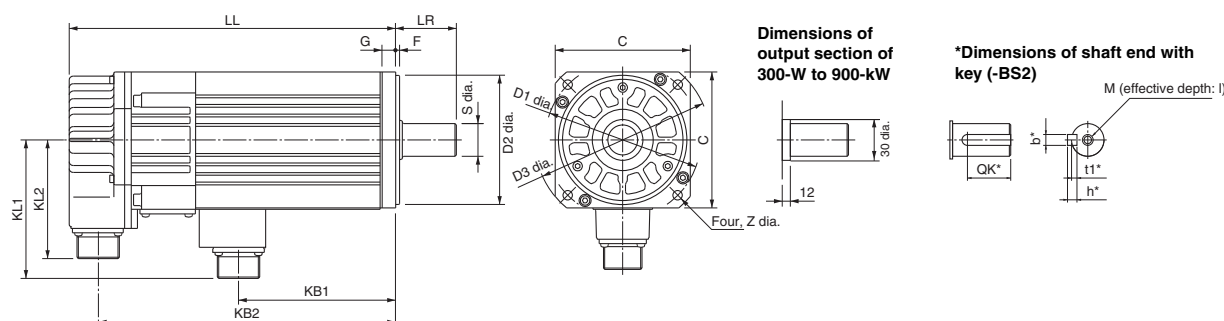
Dimensions (mm) Model	LL	LR	KB1	KB2	KL1	KL2	Flange dimensions							Shaft end dimensions						
							C	D1	D2	D3	F	G	Z	S	QK*	b*	h*	t1*	M	l
R88M-W30010□-S2	138		65	117										19 ^{h6}	25	5	5	3	M5	12
R88M-W60010□-S2	161	58	88	140	109	88	130	145	110 ^{h7}	165	6	12	9	22 ^{h6}		6	6	3.5		
R88M-W90010□-S2	185		112	164																
R88M-W1K210□-S2	166	79	89	144	140	88	180	200	114.3 ⁰ _{-0.025}	230	3.2	18	13.5	35 ^{+0.01} ₀	60	10	8	5	M12	25
R88M-W2K010□-S2	192		115	170																

1,000-r/min Cylinder-type Servomotors with a Brake

• 200 V AC: 300 W/600 W/900 W/1.2 kW/2 kW

R88M-W30010H-BS2/W60010H-BS2/W90010H-BS2/W1K210H-BS2/W2K010H-BS2

R88M-W30010T-BS2/W60010T-BS2/W90010T-BS2/W1K210T-BS2/W2K010T-BS2



*These are the dimensions for the R88M-W□-BS2 (with key and tap).

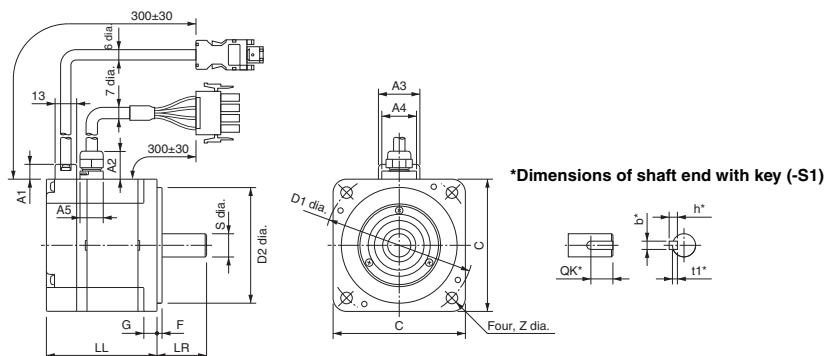
Dimensions (mm) Model	LL	LR	KB1	KB2	KL1	KL2	Flange dimensions							Shaft end dimensions						
							C	D1	D2	D3	F	G	Z	S	QK*	b*	h*	t1*	M	l
R88M-W30010□-BS2	176		56	154										19 ^{h6}	25	5	5	3	M5	12
R88M-W60010□-BS2	199	58	79	177	120	88	130	145	110 ^{h7}	165	6	12	9	22 ^{h6}		6	6	3.5		
R88M-W90010□-BS2	223		103	201																
R88M-W1K210□-BS2	217	79	79	195	146	88	180	200	114.3 ⁰ _{-0.025}	230	3.2	18	13.5	35 ^{+0.01} ₀	60	10	8	5	M12	25
R88M-W2K010□-BS2	243		105	221																

Flat-type Servomotors without a Brake

- 200 V AC: 100 W/200 W/400 W/750 W/1.5 kW

R88M-WP10030H(-S1)/WP20030H(-S1)/WP40030H(-S1)/WP75030H(-S1)/WP1K530H(-S1)

R88M-WP10030T(-S1)/WP20030T(-S1)/WP40030T(-S1)/WP75030T(-S1)/WP1K530T(-S1)



*These are the dimensions for the R88M-W□-S1 (with key).

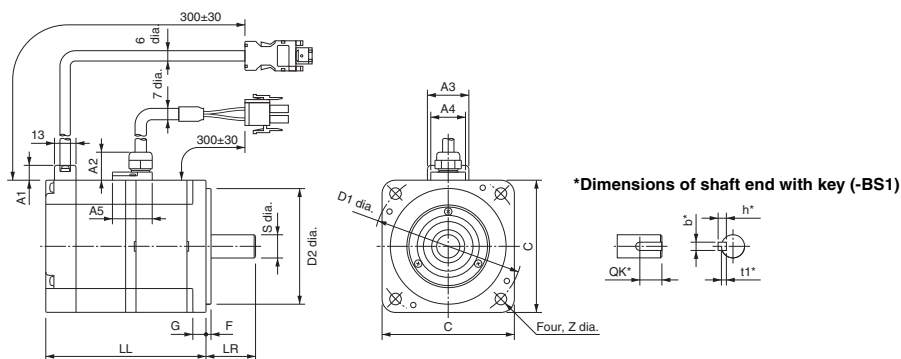
Dimensions (mm)		LL	LR	Flange dimensions						Shaft end dimensions					Cable lead-in section				
Model				C	D1	D2	F	G	Z	S	QK*	b *	h *	t1*	A1	A2	A3	A4	A5
R88M-WP10030□(-S1)	62	25		60	70	50 ^{h7}	3	6	5.5	8 ^{h6}	14	3	3	1.8	9	18	25	21	14
R88M-WP20030□(-S1)	67		30	80	90	70 ^{h7}	3	8	7	14 ^{h6}	16	5	5	3					
R88M-WP40030□(-S1)	87																		
R88M-WP75030□(-S1)	86.5		40	120	145	110 ^{h7}	3.5	10	10	16 ^{h6}	22	6	6	3.5	28		38	19	
R88M-WP1K530□(-S1)	114.5									19 ^{h6}									

Flat-type Servomotors with a Brake

- 200 V AC: 100 W/200 W/400 W/750 W/1.5 kW

R88M-WP10030H-B(S1)/WP20030H-B(S1)/WP40030H-B(S1)/WP75030H-B(S1)/WP1K530H-B(S1)

R88M-WP10030T-B(S1)/WP20030T-B(S1)/WP40030T-B(S1)/WP75030T-B(S1)/WP1K530T-B(S1)



*These are the dimensions for the R88M-W□-BS1 (with key).

Dimensions (mm)		LL	LR	Flange dimensions						Shaft end dimensions					Cable lead-in section				
Model				C	D1	D2	F	G	Z	S	QK*	b*	h*	t1*	A1	A2	A3	A4	A5
R88M-WP10030□-B(S1)	91	25	60	70	50 ^{h7}	3	6	5.5	8 ^{h6}	14	3	3	1.8	9	18	25	21	23	
R88M-WP20030□-B(S1)	98.5	30	80	90	70 ^{h7}	3	8	7	14 ^{h6}	16	5	5	3						
R88M-WP40030□-B(S1)	118.5								16	16									
R88M-WP75030□-B(S1)	120	40	120	145	110 ^{h7}	3.5	10	10	16 ^{h6}	22	6	6	3.5	28		38	26		
R88M-WP1K530□-B(S1)	148								19 ^{h6}										

Related Manuals

English Cat. No.	Japanese Cat. No.	Type	Name
I544	SBCE-331	R88M-W/R88D-WN□-ML2	OMNUC Wseries AC Servomotors/Servo Drives with Built-in MECHATROLINK-II Communications User's Manual
—	SBCE-053	R88D-WN□-ML2/R88M-W	Motor Selection Program OMNUC G/W series SMARTSTEP2/Junior/A series CD-ROM
W453	SBCE-337	CXONE-AL□□C/D-V3	CX-Drive Operation Manual

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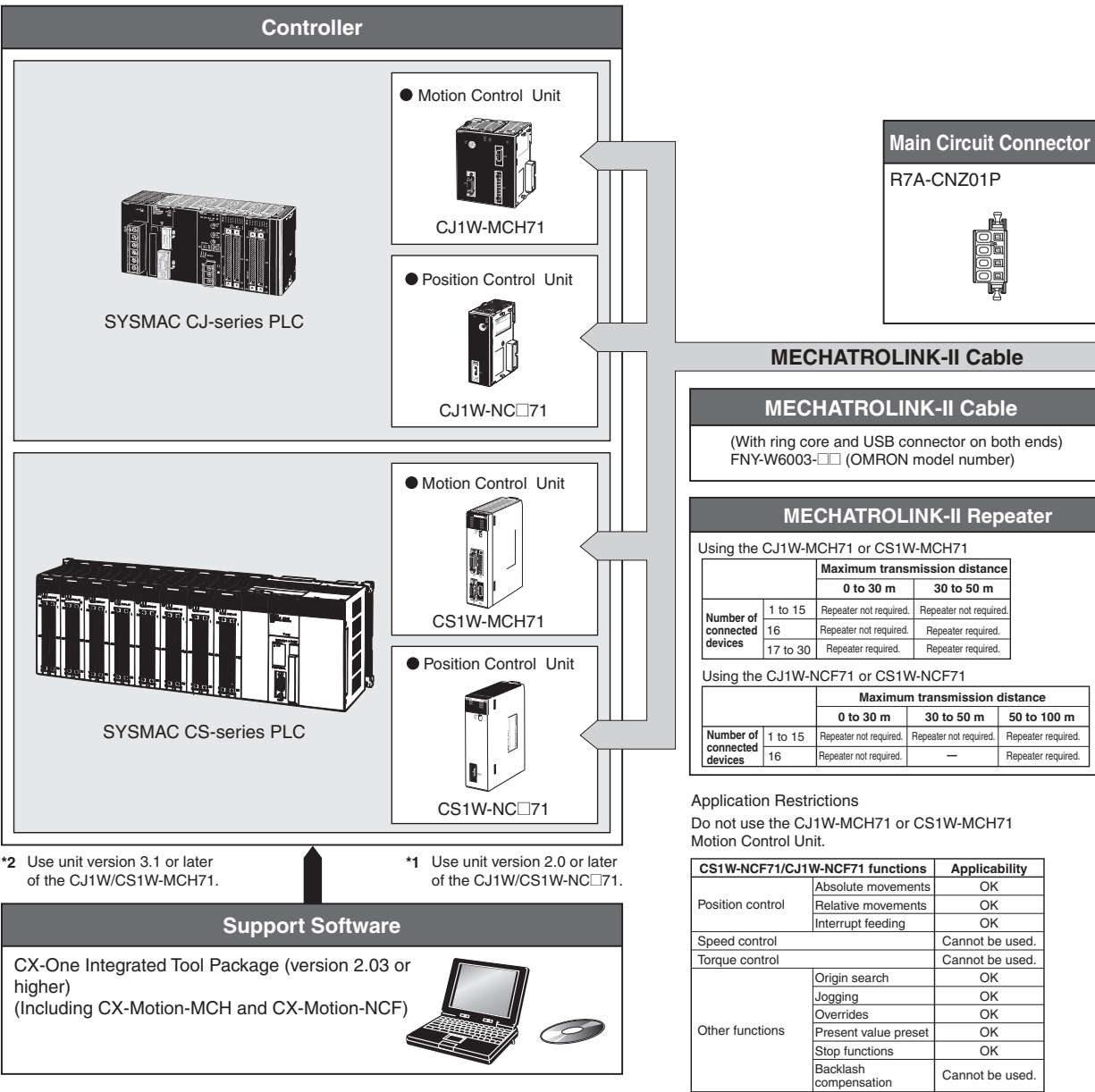
SMARTSTEP Junior AC Servomotors and Servo Drives with Built-in MECHATROLINK-II Communications

R7M-Z/R7D-ZN□-ML2

Easily Implement Positioning with Compact Servo Drives using Built-in MECHATROLINK-II Communications.

- Data Communications with MECHATROLINK-II
Data communications are used to transfer all control information between the Servo Drive and Controller. This enables using the performance of the Servo Motor to the limit because there are no restrictions imposed by the transmission performance of control signals.
- Easy to Use
This “Plug-and-Play” Servo System reduces system startup time. To achieve stable control, automatic control and adjustment functions are provided. Operation can be started quickly without any difficult settings.

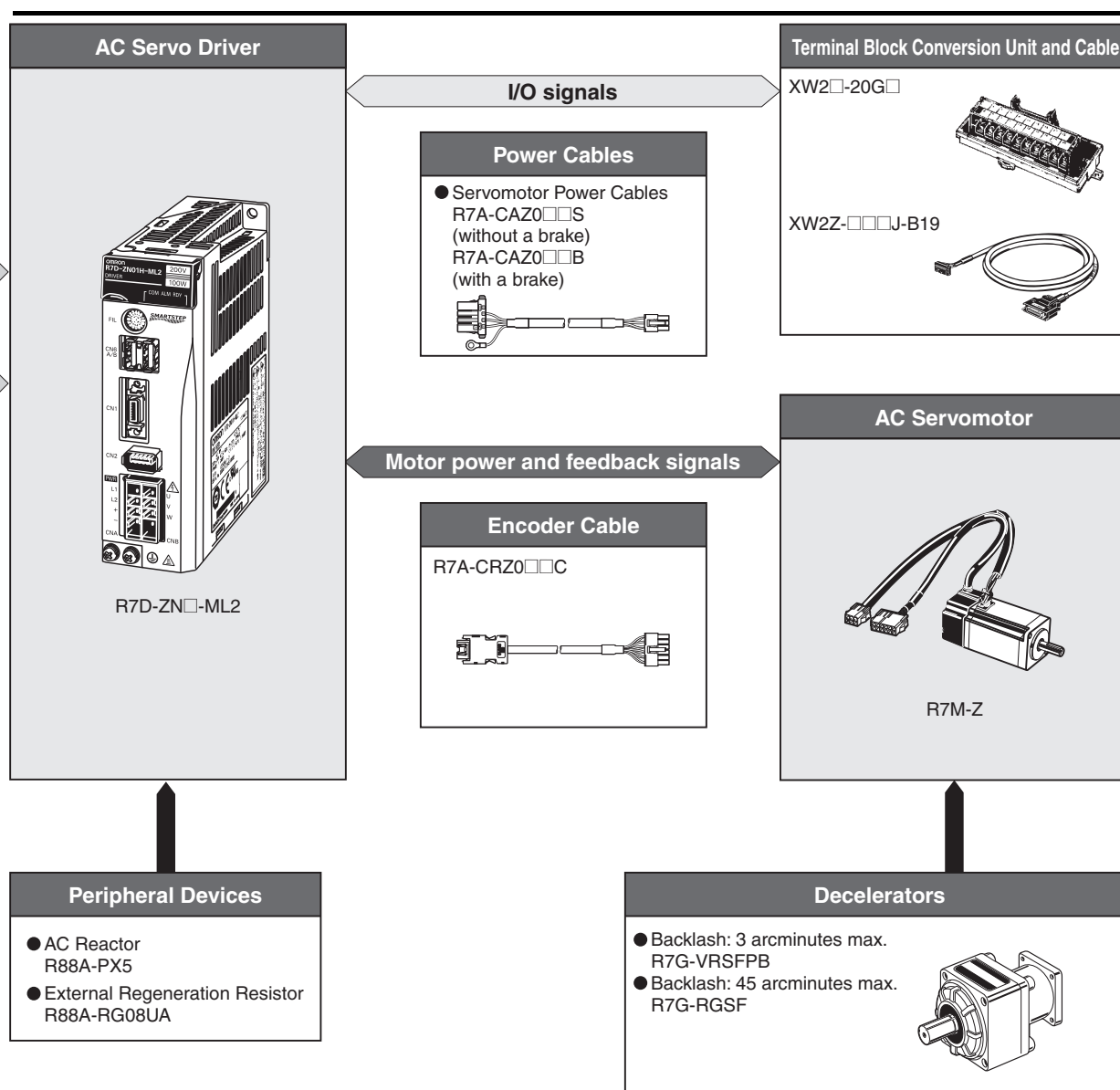
System Configuration



• Compact to Increase Control Panel Space Efficiency

The volume of the SMARTSTEP Junior is only 80% of the volume of the R7D-AP. And communications can be connected with a single cable. It all adds up to saving space in the control panel.

Note: MECHATROLINK-II is a registered trademark of the MECHATROLINK Members Association.



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

OMNUC W

SMARTSTEP
Junior

Interpreting Model Numbers

● AC Servomotors

R7M-Z□□□□□□-□□□□
 1 2 3 4 5 6

No.	Item	Symbol	Specifications
1	Indicates a Servomotor.		
2	Series	Z	SMARTSTEP Junior
3	Motor capacity	100	100 W
		200	200 W
		400	400 W
		750	750 W
4	Speed	30	3000 r/min
5	Brake	Blank	Without a brake
		B	With 24-VDC brake
6	Shaft form	S1	Straight shaft with key

● AC Servo Drives

R7D-ZN□□□□-ML2
 1 2 3 4 5

No.	Item	Symbol	Specifications
1	Indicates a Servo Drive.		
2	Series	Z	SMARTSTEP Junior
	Input signal specification	N	Communications type
3	Maximum output capacity	01	100 W
		02	200 W
		04	400 W
		08	750 W
4	Power supply voltage	H	200 VAC
5	Communications type	-ML2	MECHATROLINKII communications

● Servo Drive and Servomotor Combinations

Rated output	Servomotor		Servo Drive
	Without brake	With brake	MECHATROLINK-II communications
100 W	R7M-Z10030-S1	R7M-Z10030-BS1	R7D-ZN01H-ML2
200 W	R7M-Z20030-S1	R7M-Z20030-BS1	R7D-ZN02H-ML2
400 W	R7M-Z40030-S1	R7M-Z40030-BS1	R7D-ZN04H-ML2
750 W	R7M-Z75030-S1	R7M-Z75030-BS1	R7D-ZN08H-ML2

Ordering Information

● AC Servomotors

Cylinder-type Motors (3000 r/min)

Specifications			Model
Straight shaft with key	Without brake	100 W	R7M-Z10030-S1
		200 W	R7M-Z20030-S1
		400 W	R7M-Z40030-S1
		750 W	R7M-Z75030-S1
	With brake	100 W	R7M-Z10030-BS1
		200 W	R7M-Z20030-BS1
		400 W	R7M-Z40030-BS1
		750 W	R7M-Z75030-BS1

● AC Servo Drives

Specifications			Model
200 VAC	100 W		R7D-ZN01H-ML2
	200 W		R7D-ZN02H-ML2
	400 W		R7D-ZN04H-ML2
	750 W		R7D-ZN08H-ML2

Note: The Main Circuit Connector is not provided. Order it separately.

● Main Circuit Connector

Specifications	Model
Main Circuit Connector (CNA)	R7A-CN201P

● Decelerators (Straight Shaft with Key)

For Cylinder-type Motors (Backlash: 45 Arcminutes Max.)

Motor capacity	Model	Gear ratio		
		1/5	1/9	1/15
100 W	R7G-RGSF05B100	OK		
	R7G-RGSF09B100		OK	
	R7G-RGSF15B100			OK
200 W	R7G-RGSF05B200	OK		
	R7G-RGSF09C400		OK	
	R7G-RGSF15C400			OK
400 W	R7G-RGSF05C400	OK		
	R7G-RGSF09C400		OK	
	R7G-RGSF15C400			OK

For Cylinder-type Motors (Backlash: 3 Arcminutes Max.)

Motor capacity	Model	Gear ratio			
		1/5	1/9	1/15	1/25
100 W	R7G-VRSFPB05B100	OK			
	R7G-VRSFPB09B100		OK		
	R7G-VRSFPB15B100			OK	
	R7G-VRSFPB25C100				OK
200 W	R7G-VRSFPB05B200	OK			
	R7G-VRSFPB09C400		OK		
	R7G-VRSFPB15C400			OK	
	R7G-VRSFPB25C200				OK
400 W	R7G-VRSFPB05C400	OK			
	R7G-VRSFPB09C400		OK		
	R7G-VRSFPB15C400			OK	
	R7G-VRSFPB25D400				OK
750 W	R7G-VRSFPB05C750	OK			
	R7G-VRSFPB09D750		OK		
	R7G-VRSFPB15D750			OK	
	R7G-VRSFPB25E750				OK

● Control Cables (for CN1)

Specifications	Model	
General-purpose Control Cables	1 m	R7A-CPZ001S
	2 m	R7A-CPZ002S
Cables for Connector Terminal Blocks	1 m	XW2Z-100J-B19
	2 m	XW2Z-200J-B19
Terminal Block Conversion Unit		XW2B-20G5

● Servomotor Power Cables

Specifications			Model
Power Cables	Power Cables for Servomotors without Brakes	3 m	R7A-CAZ003S
		5 m	R7A-CAZ005S
		10 m	R7A-CAZ010S
		15 m	R7A-CAZ015S
		20 m	R7A-CAZ020S
	Power Cables for Servomotors with Brakes	3 m	R7A-CAZ003B
		5 m	R7A-CAZ005B
		10 m	R7A-CAZ010B
		15 m	R7A-CAZ015B
		20 m	R7A-CAZ020B

● Encoder Cables

Specifications	Model	
Encoder Cables	3 m	R7A-CRZ003C
	5 m	R7A-CRZ005C
	10 m	R7A-CRZ010C
	15 m	R7A-CRZ015C
	20 m	R7A-CRZ020C

● Connectors

Specifications	Model
Control I/O Connector	R7A-CNA01R
Servomotor Connector (CNB)	R7A-CNZ01A
Encoder Input Connector (CN2)	R7A-CNZ01R
Servomotor Connector for Encoder Cable	R7A-CNZ02R
Servomotor Connector for Servomotor Power Cable	R7A-CNZ02A

● Regeneration Resistance Unit

Specifications	Model
Regeneration current: 8 A Internal resistance: 50 Ω, 12 W	R88A-RG08UA

● External Regeneration Resistor

Specifications	Model
Regeneration capacity: 70 W, 47 Ω	R88A-RR22047S

● AC Reactors

Specifications	Model
R7D-ZN01H-ML2	R88A-PX5052
R7D-ZN02H-ML2	R88A-PX5053
R7D-ZN04H-ML2	R88A-PX5054
R7D-ZN08H-ML2	R88A-PX5056

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

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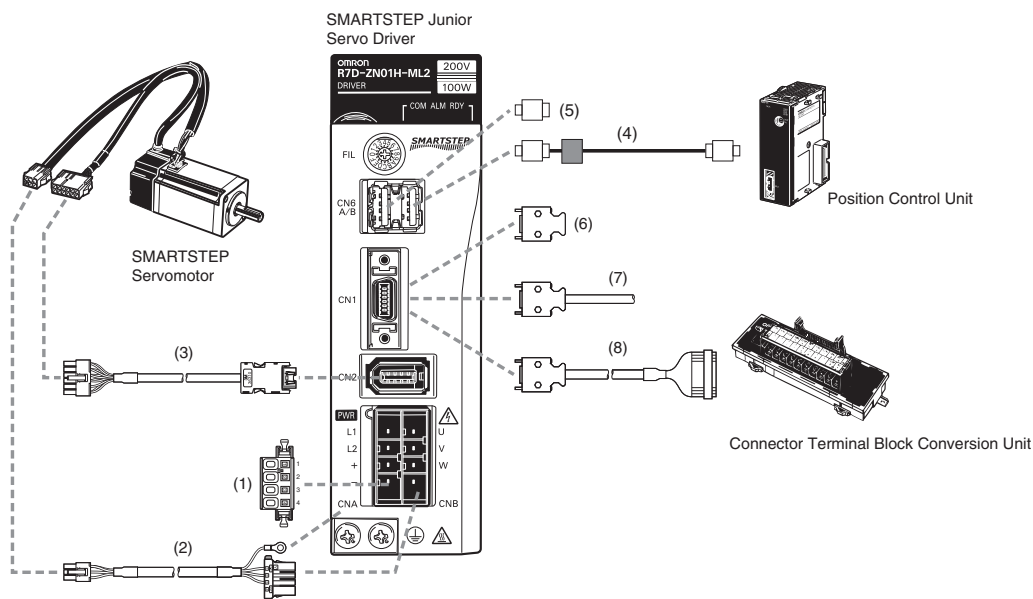
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● MECHATROLINK-related Devices and Cables (Manufactured by Yaskawa Corporation)

Name		OMRON model number	Yaskawa model number
MECHATROLINK-II Cables (with ring core and USB connector on both ends)	0.5 m	FNY-W6003-A5	JEPMC-W6003-A5
	1.0 m	FNY-W6003-01	JEPMC-W6003-01
	3.0 m	FNY-W6003-03	JEPMC-W6003-03
	5.0 m	FNY-W6003-05	JEPMC-W6003-05
	10.0 m	FNY-W6003-10	JEPMC-W6003-10
	20.0 m	FNY-W6003-20	JEPMC-W6003-20
	30.0 m	FNY-W6003-30	JEPMC-W6003-30
MECHATROLINK-II Terminating Resistor	Terminating resistance	FNY-W6022	JEPMC-W6022
MECHATROLINK-II Repeater	Communications Repeater	FNY-REP2000	JEPMC-REP2000

Note: MECHATROLINK-related Devices and Cables are manufactured by Yaskawa Corporation, but they can be ordered directly from OMRON using the OMRON model numbers. (Yaskawa-brand products will be delivered even when they are ordered from OMRON.)

Cable Combinations



● Main Circuit Connector (CNA)

No.	Name	Connected to	Model number	Description
1	Main Circuit Connector	R7D-ZN Connector	R7A-CN201P	Model: 04JFAT-SBXGF-N (JST Mfg. Co., Ltd.)

● Servomotor Power Cables (CNB)

No.	Name	Connected to	Model number	Description
2	For a Servomotor without brake	Servomotor without brake R7M-Z□□□30-S1	R7A-CAZ□□□S The □□□ digits in the model number indicate the cable length (3 m, 5 m, 10 m, 15 m, or 20 m).	Servomotor Connector Connector plug: 5557-06R-210 (Molex Japan) Connector case: 5556TL (Molex Japan) Servo Driver Connector Connector plug: 04JFAT-SAYGF-N (JST Mfg. Co., Ltd.)
	For a Servomotor with brake	Servomotor with brake R7M-Z□□□30-BS1	R7A-CAZ□□□B The □□□ digits in the model number indicate the cable length (3 m, 5 m, 10 m, 15 m, or 20 m).	Servomotor Connector Connector plug: 5557-06R-210 (Molex Japan) Connector case: 5556TL (Molex Japan) Servo Driver Connector Connector plug: 04JFAT-SAYGF-N (JST Mfg. Co., Ltd.)

● Encoder Cables (CN2)

No.	Name	Connected to	Model number	Description
3	Encoder Cable	R7M-Z□□□30-□S1	R7A-CRZ□□□C The □□□ digits in the model number indicate the cable length (3 m, 5 m, 10 m, 15 m, or 20 m).	Servomotor Connector Connector plug: 5557-12R-210 (Molex Japan) Connector case: 5556T (Molex Japan) Servo Driver Connector Connector plug: 36210-0100FD (Sumitomo 3M) Connector case: 36310-3200-008 (Sumitomo 3M)

Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

OMNUC G

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Junior

● MECHATROLINK-II Cables (CN6)

No.	Name	Specifications	OMRON model number (See note.)	Yaskawa model number
4	MECHATROLINK-II Cables (manufactured by Yaskawa Corporation)	0.5 m	FNY-W6003-A5	JEPMC-W6003-A5
		1.0 m	FNY-W6003-01	JEPMC-W6003-01
		3.0 m	FNY-W6003-03	JEPMC-W6003-03
		5.0 m	FNY-W6003-05	JEPMC-W6003-05
		10 m	FNY-W6003-10	JEPMC-W6003-10
		20 m	FNY-W6003-20	JEPMC-W6003-20
		30 m	FNY-W6003-30	JEPMC-W6003-30
5	MECHATROLINK-II Terminating Resistor (manufactured by Yaskawa Corporation)	---	FNY-W6022	JEPMC-W6022

Note: These MECHATROLINK-II products can be ordered directly from OMRON using the OMRON model numbers.
Only the Yaskawa model number will appear on the products that will be delivered.)

● CN1 Options

No.	Name	Description	Model number
6	Control I/O Connector (CN1)	Driver side	R7A-CNA01R
7	General-purpose Control Cable	1 m	R7A-CPZ001S
		2 m	R7A-CPZ002S
8	Connector Terminal Block Cable	1 m	XW2Z-100J-B19
		2 m	XW2Z-200J-B19
	Connector Terminal Block Conversion Unit	M3-screw Terminal Block	XW2B-20G4
		M3.5-screw Terminal Block	XW2B-20G5
		M3-screw Terminal Block	XW2D-20G6

AC Servo Drive Specifications (R7D-ZN□-ML2)

● General Specifications

Item			Specifications
Ambient operating temperature			0 to 55°C
Ambient operating humidity			90% max. (with no condensation)
Ambient storage temperature			–20 to 70°C
Ambient storage humidity			90% max. (with no condensation)
Storage and operating atmosphere			No corrosive gasses, no dust, no iron dust, no exposure to moisture or cutting oil
Vibration resistance			10 to 55 Hz in X, Y, and Z directions with 0.1-mm double amplitude; acceleration: 4.9 m/s ² max.
Shock resistance			Acceleration 19.6 m/s ² max., in X, Y, and Z directions, three times
Insulation resistance			Between power supply/power line terminals and frame ground: 0.5 MΩ min. (at 500 V DC)
Dielectric strength			Between power supply/power line terminals and frame ground: 1,500 V AC for 1 min at 50/60 Hz Between each control signal and frame ground: 500 V AC for 1 min
Degree of protection			Built into panel (IP10).
International standards	EC Directives	EMC Directive	EN 55011 Class A Group 1 EN61000-6-2
		Low Voltage Directive	EN50178
	UL standards		UL508C
	cUL standards		cUL C22.2 No.14

● Control Specifications

Applicable motor capacity		100 W	200 W	400 W	750 W
Servo Drive model (R7D-)		ZN01H-ML2	ZN02H-ML2	ZN04H-ML2	ZN08H-ML2
Item	Applicable Servomotors (R7M-)	Z10030-S1	Z20030-S1	Z40030-S1	Z75030-S1
Continuous output current (rms)		0.84 A	1.1 A	2.0 A	3.7 A
Momentary maximum output current (rms)		2.5 A	3.3 A	6.0 A	11.1 A
Input power supply (for main circuit and control circuit)		Single-phase 200 to 230 VAC (170 to 253 V), 50/60 Hz			
Control method		All-digital servo			
Inverter method		IGBT-driven PWM method			
Weight		1.0 kg			1.4 kg

Concepts

New Product Information/
Motion Network LineupController
FeaturesServo System
FeaturesCX-Drive/
Motor Selection ProgramServomotors, and
Servo Drives
Selection GuideControllers
Position Control UnitsControllers
Motion Control Units

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OMNUC W

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Junior

AC Servomotor Specifications (R7M-Z)

● General Specifications

Item			Specifications
Ambient operating temperature			0 to 40°C
Ambient operating humidity			20% to 80% (with no condensation)
Ambient storage temperature			-20 to 60°C
Ambient storage humidity			20% to 80% (with no condensation)
Storage and operating atmosphere			No corrosive gases
Vibration resistance			10 to 2,500 Hz, with a 0.2-mm double amplitude or acceleration of 24.5 m/s ² (whichever is smaller) in the X, Y, and Z directions
Shock resistance			98 m/s ² max. (twice in vertical direction)
Insulation resistance			10 MΩ min. at 500 VDC between the power terminals and FG terminal
Dielectric strength			1,500 VAC (50 or 60 Hz) for 1 minute between the power terminals and FG terminal
Operating position			Any direction
Insulation class			Type B
Construction			Totally-enclosed, self-cooling
Degree of protection			IP55 (excluding the through-shaft portion)
Vibration class			V-15
Mounting method			Flange-mounting
International standards	EC Directives	EMC Directive	EN 55011 Class A, Group1 EN61000-6-2
		Low Voltage Directive	IIEC 60034-1, -5, -8, and -9 EN 60034-1 and -9
	UL standards		UL1004
	cUL standards		cUL C22.2 No.100

● Characteristics

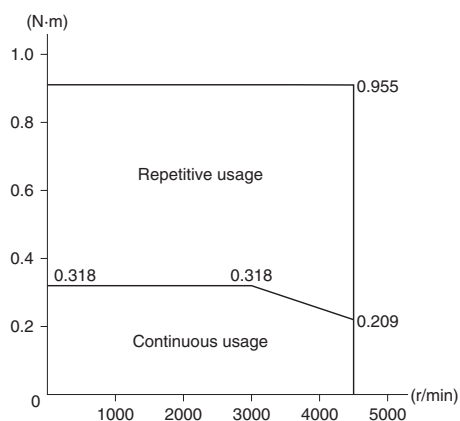
Servomotor model			Z10030-S1	Z20030-S1	Z40030-S1	Z75030-S1	
Applicable Servo Drives (R7D-)			ZN01H-ML2	ZN02H-ML2	ZN04H-ML2	ZN08H-ML2	
Rated output		W	100	200	400	750	
Rated torque		N·m	0.318	0.637	1.27	2.39	
Rated rotation speed		r/min	3000				
Max. momentary speed		r/min	4500				
Max. momentary torque		N·m	0.955	1.91	3.82	7.16	
Rated current		A (rms)	0.84	1.1	2.0	3.7	
Max. momentary current		A (rms)	2.5	3.3	6.0	11.1	
Rotor inertia		kg·m ² (GD ² /4)	6.34 × 10 ⁻⁶	3.30 × 10 ⁻⁵	6.03 × 10 ⁻⁵	1.50 × 10 ⁻⁴	
Power rate		kW/s	16.0	12.3	26.7	38.1	
Allowable radial load		N	78	245	245	392	
Allowable thrust load		N	54	74	74	147	
Weight	Without brake	kg	0.5	0.9	1.3	2.6	
	With brake	kg	0.7	1.5	1.9	3.5	
Radiation shield dimensions (material)			t6 × 250 × 250 (Al)				
Applicable load inertia (See note.)		kg·m ²	6.0 × 10 ⁻⁵ (9.5×)	3.0 × 10 ⁻⁴ (9.1×)	5.0 × 10 ⁻⁴ (8.3×)	1.0 × 10 ⁻³ (6.7×)	
Brake specifications	Brake inertia	kg·m ² (GD ² /4)	7.54 × 10 ⁻⁷	6.4 × 10 ⁻⁶	6.4 × 10 ⁻⁶	1.71 × 10 ⁻⁵	
	Excitation voltage	V	24 VDC±10%				
	Power consumption (at 20°C)	W	6	7	7	7.7	
	Current consumption (at 20°C)	A	0.25	0.29	0.29	0.32	
	Static friction torque	N·m	0.318 min.	0.637 min.	1.27 min.	2.45 min.	
	Attraction time	ms	60 max.				80 max.
	Release time	ms	30 max.	20 max.			
	Backlash		1° max.				
Rating			Continuous				

Note: Use within the applicable load inertia range. Operation may not be stable outside of this range.

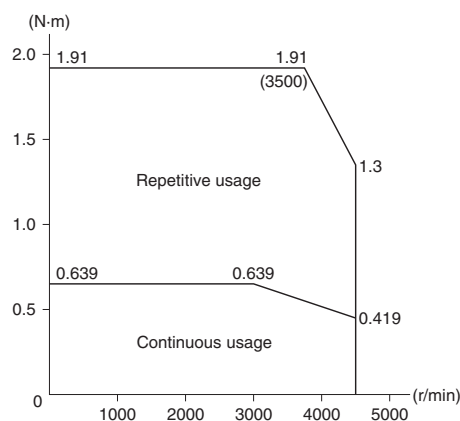
Torque and Rotation Speed Characteristics

The following graphs show the characteristics with a 3-m standard cable and a 200-V AC input.

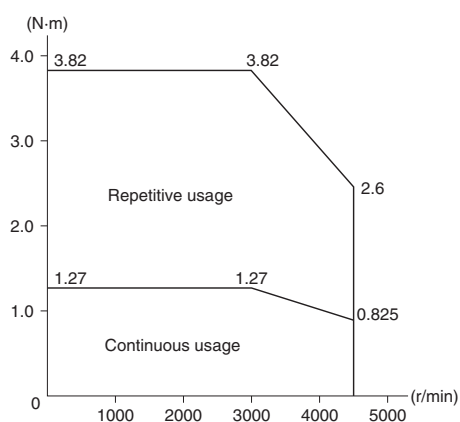
R7M-Z10030-S1 (100 W)



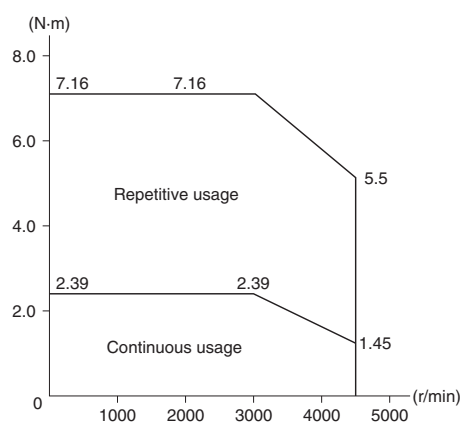
R7M-Z20030-S1 (200 W)



R7M-Z40030-S1 (400 W)



R7M-Z75030-S1 (750 W)



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

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Decelerator Specifications (R7G-VRSF)

● Standard Models and Specifications

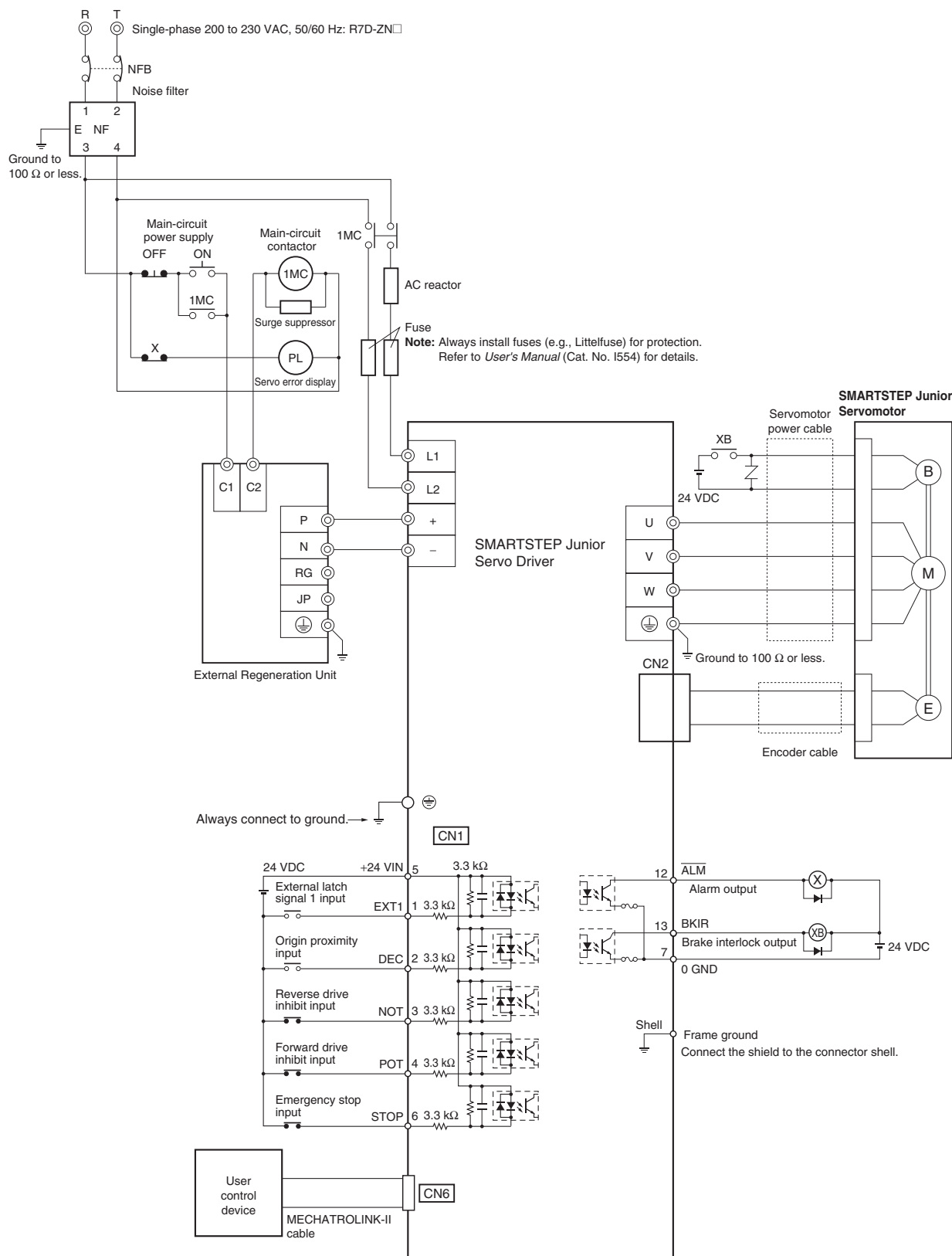
Backlash: 3 Arcminutes Max.

Motor capacity	Gear ratio	Model (R7G-)	Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N
100 W	1/5	VRSFPB05B100	600	1.19	75	900	3.60	4.08×10^{-6}	392	196
	1/9	VRSFPB09B100	333	2.29	80	500	6.91	3.43×10^{-6}	441	220
	1/15	VRSFPB15B100	200	3.82	80	300	11.5	3.62×10^{-6}	588	294
	1/25	VRSFPB25C100	120	6.36	80	180	19.2	3.92×10^{-6}	1323	661
200 W	1/5	VRSFPB05B200	600	2.71	85	900	8.12	1.53×10^{-5}	392	196
	1/9	VRSFPB09C400	333	3.78	66	500	11.3	2.68×10^{-5}	931	465
	1/15	VRSFPB15C400	200	6.31	66	300	18.9	2.71×10^{-5}	1176	588
	1/25	VRSFPB25C200	120	11.1	70	180	33.4	2.67×10^{-5}	1323	661
400 W	1/5	VRSFPB05C400	600	5.40	85	900	16.2	3.22×10^{-5}	784	392
	1/9	VRSFPB09C400	333	9.49	83	500	28.5	2.68×10^{-5}	931	465
	1/15	VRSFPB15C400	200	15.8	83	300	47.6	2.71×10^{-5}	1176	588
	1/25	VRSFPB25D400	120	26.4	83	180	79.3	2.79×10^{-5}	1617	808
750 W	1/5	VRSFPB05C750	600	10.8	90	900	32.0	7.17×10^{-5}	784	392
	1/9	VRSFPB09D750	333	18.3	85	500	54.3	6.50×10^{-5}	1176	588
	1/15	VRSFPB15D750	200	30.5	85	300	90.5	7.09×10^{-5}	1372	686
	1/25	VRSFPB25E750	120	50.8	85	180	151	7.05×10^{-5}	2058	1029

Backlash: 45 Arcminutes Max.

Motor capacity	Gear ratio	Model (R7G-)	Rated speed	Rated torque	Ratio	Maximum momentary speed	Maximum momentary torque	Decelerator inertia	Allowable radial load	Allowable thrust load
			r/min	N·m	%	r/min	N·m	kg·m ²	N	N
100 W	1/5	RGSF05B100	600	1.19	75	900	3.60	4.08×10^{-6}	392	196
	1/9	RGSF09B100	333	2.29	80	500	6.91	3.43×10^{-6}	441	220
	1/15	RGSF15B100	200	3.82	80	300	11.5	3.62×10^{-6}	588	294
200 W	1/5	RGSF05B200	600	2.71	85	900	8.12	1.53×10^{-5}	392	196
	1/9	RGSF09C400	333	3.78	66	500	11.3	2.68×10^{-5}	931	465
	1/15	RGSF15C400	200	6.31	66	300	18.9	2.71×10^{-5}	1176	588
400 W	1/5	RGSF05C400	600	5.4	85	900	16.2	3.22×10^{-5}	784	392
	1/9	RGSF09C400	333	9.49	83	500	28.5	2.68×10^{-5}	931	465
	1/15	RGSF15C400	200	15.8	83	300	47.6	2.71×10^{-5}	1176	588

Connections



Concepts

New Product Information/
Motion Network Lineup

Controller
Features

Servo System
Features

CX-Drive/
Motor Selection Program

Servomotors, and
Servo Drives
Selection Guide

Controllers
Position Control Units

Controllers
Motion Control Units

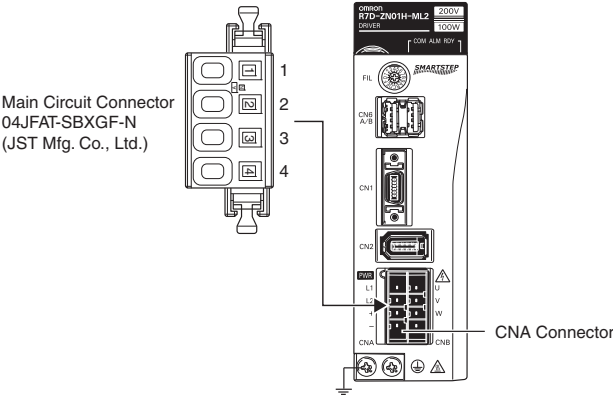
OMNUC G

OMNUC W

SMARTSTEP
Junior

I/O Circuit Diagrams

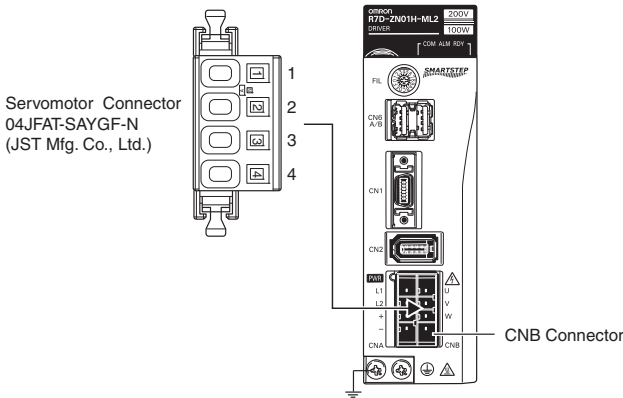
■ R7A-CN201P Main Circuit and Servomotor Connector Specifications (CNA)





● Main Circuit Connector (CNA) Pin Arrangement

Signal No.	Signal	Name	Function
1	L1	Main circuits power supply input	Single-phase 200/230 V AC (170 to 253 V AC) 50/60 Hz
2	L2		
3	+	External Regeneration Unit connection terminals	If regenerative energy is high, connect an External Regeneration Unit
4	-		
⏏	⏏	Frame ground	This is the ground terminal. Ground to a minimum of 100 Ω (class D, class 3).

■ R7A-CN201A (CNB) Servomotor Connector Specifications



● Servomotor Connector (CNB) Pin Arrangement

Signal No.	Signal	Name	Function	
1	U	Servomotor connection Terminals	Red	These are the output terminals to the Servomotor. Be careful to wire them correctly.
2	V		White	
3	W		Blue	
4	—	---	Do not connect anything to this terminal.	
		Frame ground	Green/Yellow	Connect the Servomotor FG terminal.

■ Control I/O Signals

● CN1 Control Inputs

Pin No.	Signal name	Name	Function/Interface
1	EXT1	External latch signal 1 input	Functions as an origin signal during origin search, and as an interrupt signal during interrupt feeding.
2	DEC	Origin proximity input	Deceleration input during origin search
3	NOT	Reverse drive inhibit input	Reverse rotation overtravel input
4	POT	Forward drive inhibit input	Forward rotation overtravel input
5	+24 VIN	+24-V power supply input for control DC	24-VDC power supply input terminal for sequence inputs (pin 6)
6	STOP	Emergency stop input	ON: Servo OFF (Stops power to Servomotor.)

● CN1 Control Outputs

Pin No.	Signal name	Name	Function/Interface
12	ALM	Alarm output	When the Servo Drive generates an alarm, the output turns OFF. Note: OFF for approx. 2 s after the power is turned ON.
13	BKIR	Brake interlock output	Outputs the holding brake timing signals. Release the holding brake when this signal is ON.
7	0GND	Output ground common	Ground common for sequence outputs (pins 12 and 13).

Note: An open-collector output interface is used for sequence outputs (maximum operating voltage: 30 V DC; maximum output current: 50 mA).

■ CN1 Connectors (14P)

● Soldered Connectors

Name	Model	Manufacturer
Cable plug	10114-3000VE	Sumitomo 3M
Cable case (shell kit)	10314-52A0-008	

■ Encoder Connector Specifications (CN2)

Pin No.	Signal	Name
1	E5V	Encoder power supply, +5 V
2	E0V	Encoder power supply, GND
3	Phase A+	Encoder phase +A input
4	Phase A-	Encoder phase -A input
5	Phase B+	Encoder phase +B input
6	Phase B-	Encoder phase -B input
7	Phase Z	Encoder phase Z input
8	Phase U	Pole sensor phase U input
9	Phase V	Pole sensor phase V input
10	Phase W	Pole sensor phase W input
Shell	FG	Shield ground

■ Connectors for CN2 (10-pin)

● Crimped Connector

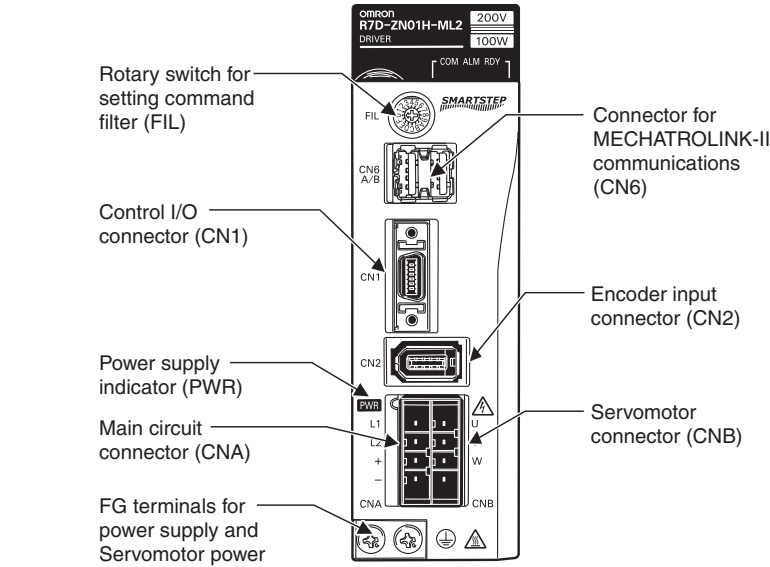
Name	Model	Manufacturer
Plug, Cable, and Cover Set	54559-1005	Molex Japan Co.
Plug Housing	51209-1001	
Crimp Terminal	59351-8187 (Loose wire)	
Crimping Tool	57401-5300	

● Soldered Connector

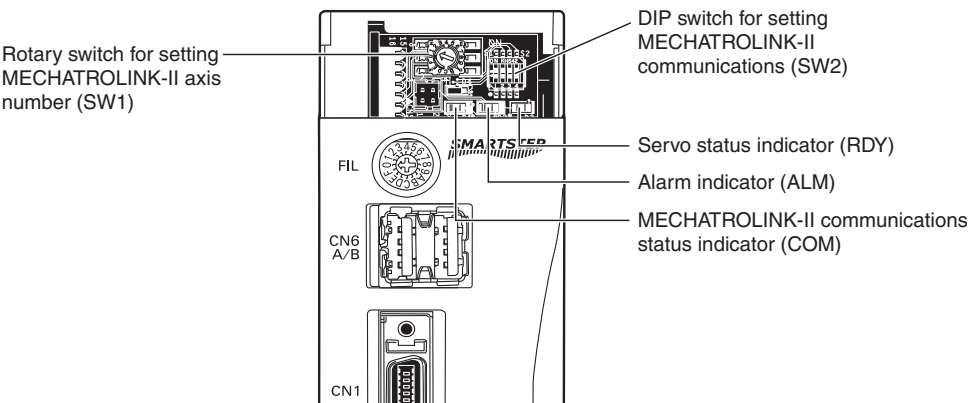
Name	Model	Manufacturer
Plug, Cable, and Cover Set	54599-1019	Molex Japan Co.
Plug Connector	51593-1019	

Components and Functions

● Servo Drive Nomenclature



With Top Cover Open



● Rotary Switch for Setting Command Filter (FIL)

This switch does not need to be set if the machine is not subject to vibration.
It can be set as a troubleshooting method if overshooting or other problems occur. (The switch is factory-set to 0.)

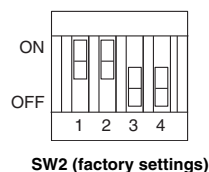
Filter setting (See note 1.)	Acceleration/deceleration time for STEP command (See note 2.)	Approx. time from end of command to end of positioning (settling time) (See note 3.)	Description
0	45 ms	100 to 200 ms	<div>↑ Smaller filter time constant (short positioning time)</div> <div>↓ Larger filter time constant (longer positioning time with little vibration)</div>
1	50 ms	110 to 220 ms	
2	60 ms	130 to 260 ms	
3	65 ms	150 to 300 ms	
4	70 ms	170 to 340 ms	
5	80 ms	200 to 400 ms	
6	85 ms	250 to 500 ms	
7	170 ms	500 to 1000 ms	
8 to F	Do not set this switch to 8 to F.		

- Note:** 1. Increase the value of the filter setting if there is vibration when starting or stopping.
2. Use the acceleration/deceleration times as a guideline for determining the Servomotor capacity that can be driven when using STEP commands without commanded acceleration/ deceleration.
3. The settling time depends on the commanded acceleration/deceleration, the rigidity of the machine motor drive, the encoder resolution, and other factors.

● DIP Switch (SW2) for MECHATROLINK-II Communications Settings

MECHATROLINK-II communications specifications are set using the DIP switch (SW2) for MECHATROLINK-II communications settings. The settings are shown in the following table. Changes to the settings go into effect after the power is turned ON.

Bit	Name	Setting	Contents	Factory setting
Bit 1	Reserved for system	ON	---	ON
Bit 2	Reserved for system	ON	---	ON
Bit 3	Axis No. setting	OFF	Axis No. 15 max.	OFF
		ON	Axis No. 16 min.	
Bit 4	Filter setting selection	OFF	Enables or disables the rotary switch for setting the command filter (FIL).	OFF



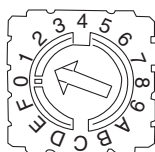
● Filter Setting Selection

There are two methods for setting the command filter, as shown below. The selection is made using SW2 bit 4.

SW2, bit 4	Specifications
OFF	Set using the rotary switch for setting the command filter (FIL). (Factory setting)
ON	Set using Pn00A. (Disables the rotary switch for setting the command filter.)

● MECHATROLINK-II Axis Number Rotary Switch (SW1)

The axis number is set as shown below, using the rotary switch for setting the MECHATROLINK-II axis number (SW1) and the DIP switch for setting MECHATROLINK-II communications (SW2, bit 3).



SW2, bit 3	SW1	Axis No.	SW2, bit 3	SW1	Axis No.
OFF	0	Not valid	ON	0	16
	1	1		1	17
	2	2		2	18
	3	3		3	19
	4	4		4	20
	5	5		5	21
	6	6		6	22
	7	7		7	23
	8	8		8	24
	9	9		9	25
	A	10		A	26
	B	11		B	27
	C	12		C	28
	D	13		D	29
	E	14		E	30
	F	15		F	31

Parameter

● Function Selection Parameters (from Pn000)

Parameter name	Description
Function selection basic switches	Reverse rotation
Command filter setting (See note.)	Set when there is a problem such as overshooting.

Note: The setting method is the same as with the command filter setting rotary switch (FIL).

● Position Control Parameters (from Pn200)

Parameter name	Description
Electronic gear ratio G1 (Numerator)	Sets the pulse rate for the command pulses and Servomotor travel distance. $0.01 \leq Pn20E/Pn210 \leq 100$
Electronic gear ratio G2 (Denominator)	

● Speed Control Parameters (from Pn300)

Parameter name	Description
Jog speed	Sets the rotation speed for jog operation.

● Sequence Parameters (from Pn500)

Parameter name	Description
Input signal selection 1	POT signal allocation
Input signal selection 2	NOT signal allocation
Input signal selection 7	STOP signal allocation
Positioning completion width 1	Sets the positioning completion output 1 width.
Positioning completion width 2	Sets the positioning completion output 2 width.

● Other Parameters (from Pn800)

Parameter name	Description
	Digit No.
Communications control	Warning check mask
Function selection application 6 (Software LS)	Software limit function
Zero point width	Sets the origin position output range.
Forward software limit	Sets the software limit in the forward direction.
Reverse software limit	Sets the software limit in the reverse direction.
Linear acceleration constant	Sets the acceleration.
Linear deceleration constant	Sets the deceleration.
Final travel distance for external positioning	Sets the distance from the interrupt signal (EXT1) input position during interrupt feeding. (See note 1.)
Zero point return mode settings	Zero point return direction
Zero point return approach speed 1	Sets the speed for after the origin proximity input signal turns ON during an origin search.
Zero point return approach speed 2	Sets the speed for finding the origin after the origin proximity input signal turns ON and OFF during an origin search.
Final travel distance to return to zero point	Sets the distance from the phase-Z signal or external latch signal 1 (EXT1) input position to the origin during an origin search. (See note 2.)

Note: 1. In the negative direction, or when the distance is short, the rotation is reversed after decelerating to a stop.
2. In the origin search or reverse direction, or when the distance is short, the rotation is reversed after decelerating to a stop.

Dimensions

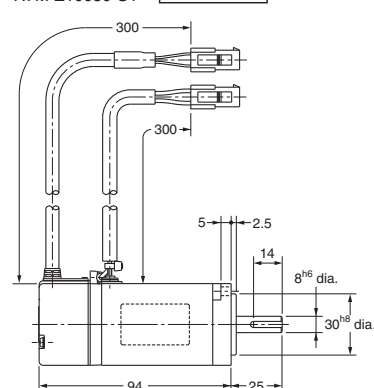
(Unit: mm)

● AC Servomotors

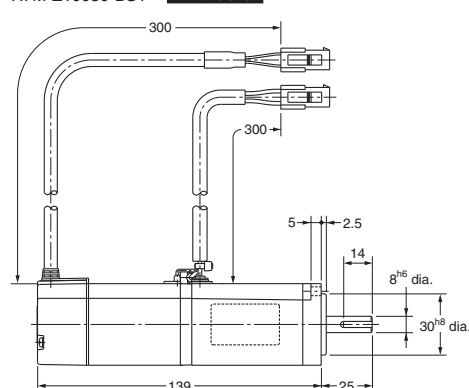
● 100-W Servomotor without Brake R7M-Z10030-S1

● 100-W Servomotor with Brake R7M-Z10030-BS1

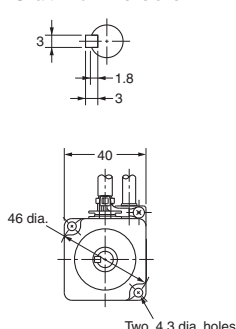
R7M-Z10030-S1 Without brake



R7M-Z10030-BS1 With brake



Shaft End Dimensions

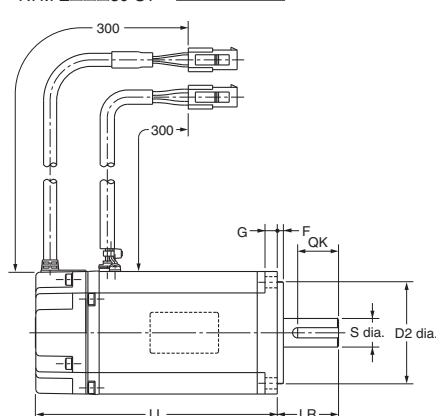


● 200-W/400-W/750-W Servomotors without Brakes R7M-Z20030-S1/-Z40030-S1/-Z75030-S1

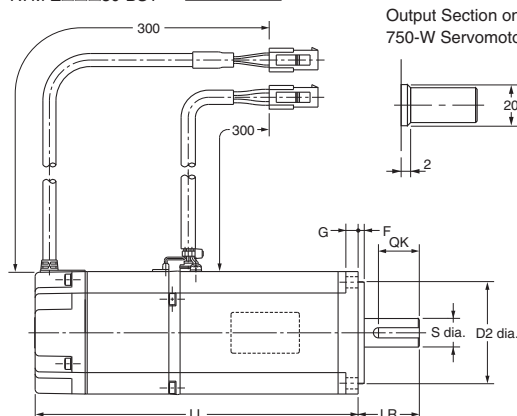
● 200-W/400-W/750-W Servomotors with Brakes R7M-Z20030-BS1/-Z40030-BS1/-Z75030-BS1

Dimensions (mm)	LL		LR	Flange						Shaft end	
Model	Without brake	With brake		C	D1	D2	F	G	Z	S	QK
R7M-Z20030-S1	95.5	135.5	30	60	70	50 ^{h8}	3	6	Four, 5.5 dia.	14 ^{h6}	20
R7M-Z40030-S1	118.5	158.5		80	90	70 ^{h8}		8	Four, 7 dia.	16 ^{h6}	30
R7M-Z75030-S1	133	176	40								

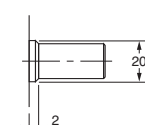
R7M-Z□□□30-S1 Without brake



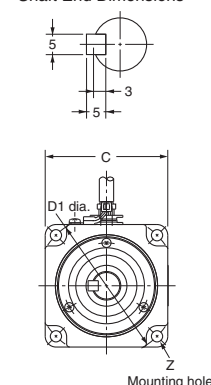
R7M-Z□□□30-BS1 With brake



Output Section on 750-W Servomotor



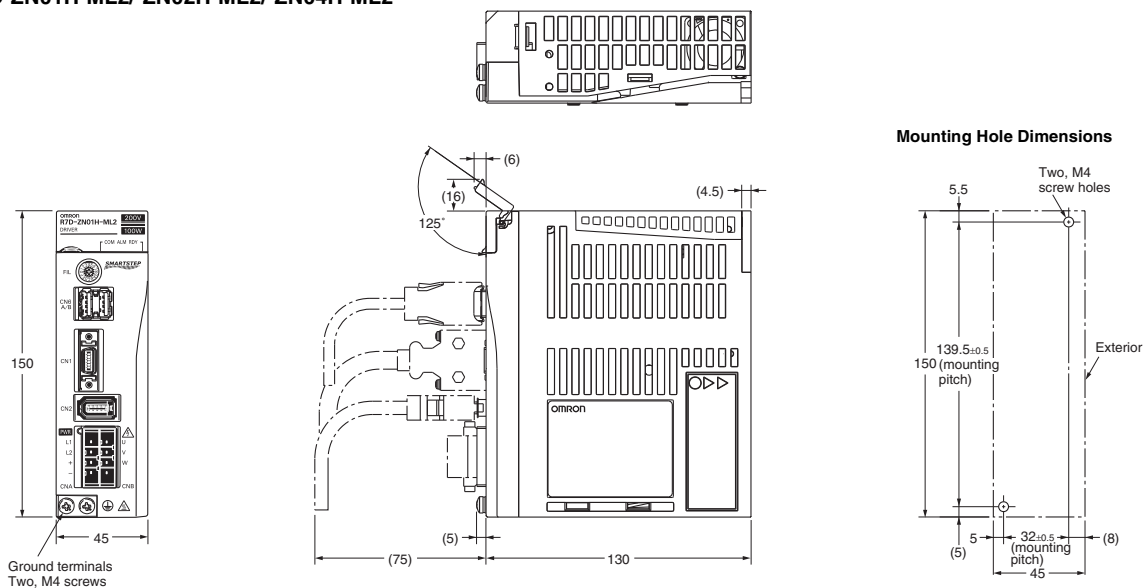
Shaft End Dimensions



● AC Servo Drives

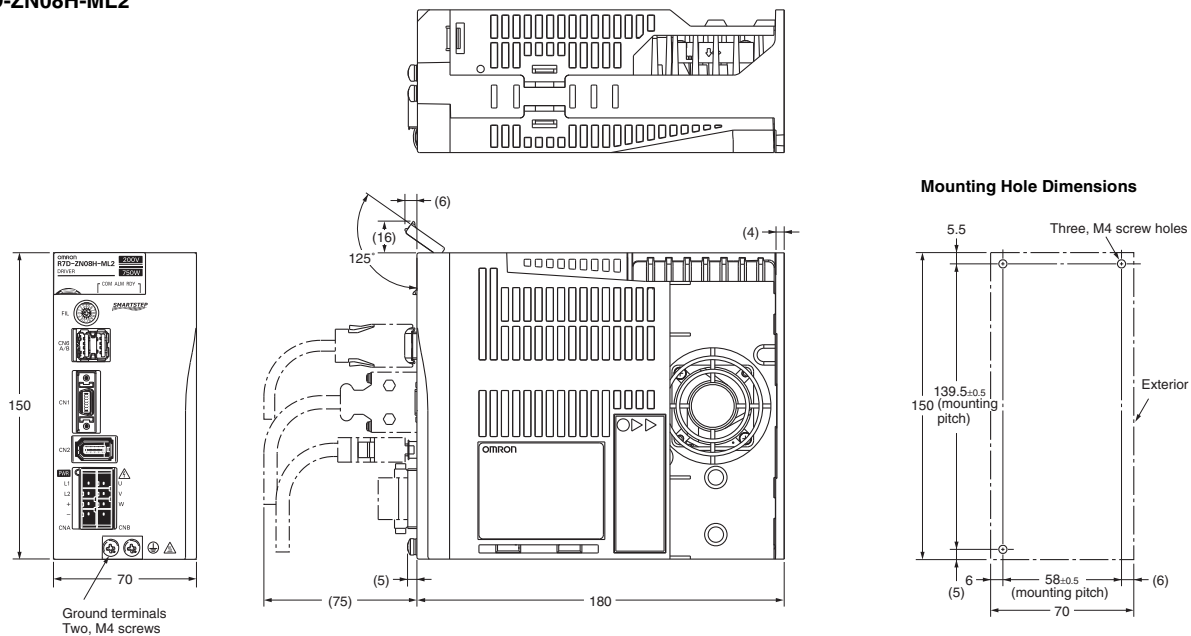
● 200 VAC: 100 W/200 W/400 W

R7D-ZN01H-ML2/-ZN02H-ML2/-ZN04H-ML2



● 200 VAC: 750 W

R7D-ZN08H-ML2

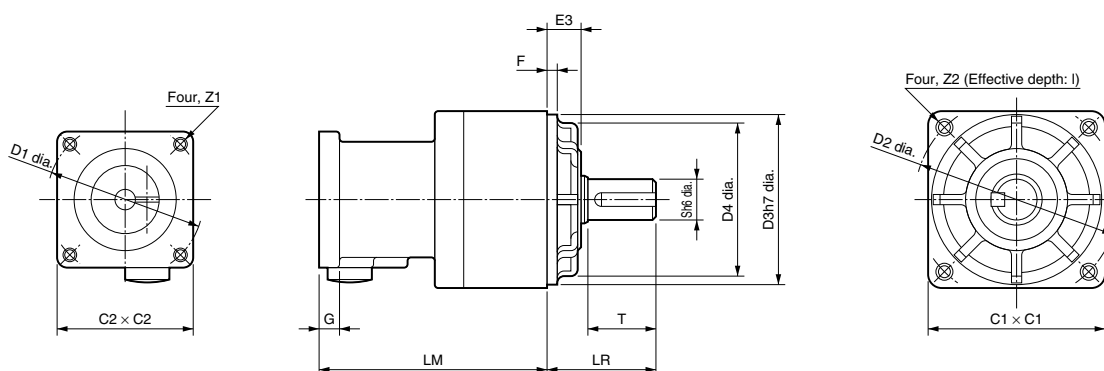


● Decelerators

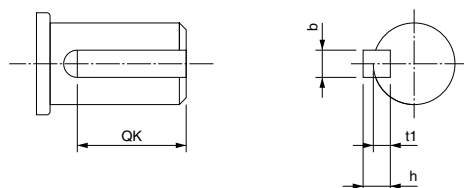
For Cylinder-type Motors (Backlash: 3 Arcminutes Max.)

Model			Dimensions (mm)																			Weight (kg)	
			LM	LR	C1	C2	D1	D2	D3	D4	E3	F	G	S	T	Z1	Z2	I	Key dimensions				
																			QK	b	h		t1
100 W	1/5	R7G-VRSFPB05B100	67.5	32	52	40	46	60	50	45	10	3	6	12	20	M4	M5	12	16	4	4	2.5	0.55
	1/9	R7G-VRSFPB09B100	67.5	32	52	40	46	60	50	45	10	3	6	12	20	M4	M5	12	16	4	4	2.5	0.55
	1/15	R7G-VRSFPB15B100	78	32	52	40	46	60	50	45	10	3	6	12	20	M4	M5	12	16	4	4	2.5	0.7
	1/25	R7G-VRSFPB25C100	92	50	78	40	46	90	70	62	17	3	6	19	30	M4	M6	20	22	6	6	3.5	1.7
200 W	1/5	R7G-VRSFPB05B200	72.5	32	52	60	70	60	50	45	10	3	10	12	20	M5	M5	12	16	4	4	2.5	0.72
	1/9	R7G-VRSFPB09C400	89.5	50	78	60	70	90	70	62	17	3	8	19	30	M5	M6	20	22	6	6	3.5	1.7
	1/15	R7G-VRSFPB15C400	100	50	78	60	70	90	70	62	17	3	8	19	30	M5	M6	20	22	6	6	3.5	2.1
	1/25	R7G-VRSFPB25C200	100	50	78	60	70	90	70	62	17	3	8	19	30	M5	M6	20	22	6	6	3.5	2.1
400 W	1/5	R7G-VRSFPB05C400	89.5	50	78	60	70	90	70	62	17	3	8	19	30	M5	M6	20	22	6	6	3.5	1.7
	1/9	R7G-VRSFPB09C400	89.5	50	78	60	70	90	70	62	17	3	8	19	30	M5	M6	20	22	6	6	3.5	1.7
	1/15	R7G-VRSFPB15C400	100	50	78	60	70	90	70	62	17	3	8	19	30	M5	M6	20	22	6	6	3.5	2.1
	1/25	R7G-VRSFPB25D400	104	61	98	60	70	115	90	75	18	5	8	24	40	M5	M8	20	30	8	7	4	3.2
750 W	1/5	R7G-VRSFPB05C750	93.5	50	78	80	90	90	70	62	17	3	10	19	30	M6	M6	20	22	6	6	3.5	2.1
	1/9	R7G-VRSFPB09D750	97.5	61	98	80	90	115	90	75	18	5	10	24	40	M6	M8	20	30	8	7	4	3.4
	1/15	R7G-VRSFPB15D750	110	61	98	80	90	115	90	75	18	5	10	24	40	M6	M8	20	30	8	7	4	3.8
	1/25	R7G-VRSFPB25E750	135	75	125	80	90	135	110	98	17	5	10	32	55	M6	M10	20	45	10	8	5	7.2

Dimensions



Key dimensions



Concepts

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OMNUC G

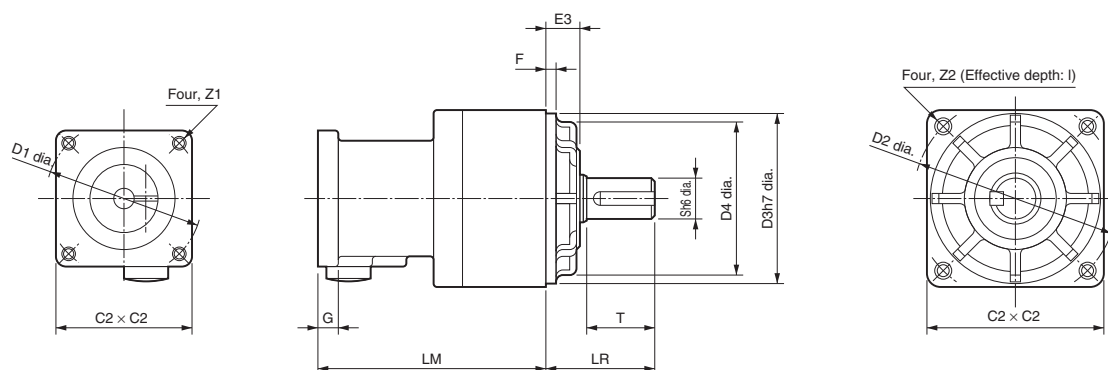
OMNUC W

SMARTSTEP
Junior

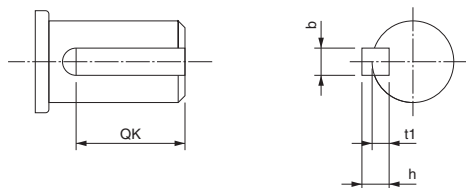
For Cylinder-type Motors (Backlash: 45 Arcminutes Max.)

Model			Dimensions (mm)																		Weight (kg)		
			LM	LR	C1	C2	D1	D2	D3	D4	E3	F	G	S	T	Z1	Z2	I	Key dimensions				
																			QK	b		h	t1
100 W	1/5	R7G-RGSF05B100	67.5	32	52	40	46	60	50	45	10	3	6	12	20	M4	M5	12	16	4	4	2.5	0.55
	1/9	R7G-RGSF09B100	67.5	32	52	40	46	60	50	45	10	3	6	12	20	M4	M5	12	16	4	4	2.5	0.55
	1/15	R7G-RGSF15B100	78	32	52	40	46	60	50	45	10	3	6	12	20	M4	M5	12	16	4	4	2.5	0.70
200 W	1/5	R7G-RGSF05B200	72.5	32	52	60	70	60	50	45	10	3	10	12	20	M5	M5	12	16	4	4	2.5	0.72
	1/9	R7G-RGSF09C400	89.5	50	78	60	70	90	70	62	17	3	8	19	30	M5	M6	20	22	6	6	3.5	1.7
	1/15	R7G-RGSF15C400	100	50	78	60	70	90	70	62	17	3	8	19	30	M5	M6	20	22	6	6	3.5	2.1
400 W	1/5	R7G-RGSF05C400	89.5	50	78	60	70	90	70	62	17	3	8	19	30	M5	M6	20	22	6	6	3.5	1.7
	1/9	R7G-RGSF09C400	89.5	50	78	60	70	90	70	62	17	3	8	19	30	M5	M6	20	22	6	6	3.5	1.7
	1/15	R7G-RGSF15C400	100	50	78	60	70	90	70	62	17	3	8	19	30	M5	M6	20	22	6	6	3.5	2.1

Dimensions



Key dimensions



Related Manuals

English Cat. No.	Japanese Cat. No.	Type	Name
I544	SBCE-344	R7M-Z/R7D-ZN□-ML2	AC Servomotors/Drive SMARTSTEP Junior
—	SBCE-053	R7D-BP/R88M-GT/R7D-Z/ R7D-A/R88D-W	Motor Selection Program OMNUC G/W series SMARTSTEP2/Junior/A series CD-ROM

Read and Understand this Catalog

Please read and understand this catalog before purchasing the product. Please consult your OMRON representative if you have any questions or comments.

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Application Considerations

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NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons. Consult with your OMRON representative at any time to confirm actual specifications of purchased product.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

Note: Do not use this document to operate the Unit.

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